THE RELATIONSHIP BETWEEN DIVERSITY, LEADERSHIP AND INNOVATION IN THE SOUTH AFRICAN CONSTRUCTION INDUSTRY

By

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ABSTRACT

The absence (or lack) of a diverse leadership and workforce in the South African construction industry is hindering innovation in the industry. The result is a weakened ability to respond to a fast paced technologically driven market and economic changes which impacts directly on organisational growth and performance. This further limits the industry's ability to provide inclusive innovative solutions to industry challenges and societal infrastructure challenges. Little is known about the role of leadership in driving, influencing, and managing the relationship between diversity and innovation in the South African construction industry. The construction industry has not been responsive to market changes and consequently, has been slow to innovate and grow. The rapidly evolving societal contextual landscape requires a more diverse workforce to specifically respond to and address these challenges. South Africa is faced with many infrastructure challenges, such as insufficient eroded road and water infrastructure, lack of sufficient housing, high unemployment of construction graduates, that impact negatively on society's most impoverished and marginalised. The exclusivity of South Africa's growth path is further emphasised by a high unemployment rate of 25%, while the comprehensive social welfare system has succeeded in reducing inequalities in access to public services and housing, poverty has remained stagnant, and inequality has remained exceptionally high, underpinned by one of the world's consistently highest unemployment rates.

This study investigated the role of leadership in managing the relationship between diversity and innovation in the construction industry by examining how leadership influences, drives, and manages this relationship to advance organisational performance in the South African construction industry. A convergent parallel mixed method approach was used to elicit the views of all the professionals (the construction industry work force) working within the South African construction industry on how they perceive, interact, feel, experience, engage and rate the level of importance of the three elements under investigation. A pilot study was conducted with a small sample to evaluate the comprehensibility of the questions. Thereafter, a questionnaire (survey) was distributed to professionals in various roles and levels within the South African construction industry. To better understand how leaders within the South African construction industry view, interact, feel, experience, engage and rate the level of importance of the three elements, semi-structured interviews were conducted via Microsoft teams concurrently with the questionnaire that was distributed via the survey monkey digital platform.

The quantitative data collected was exported from the Survey Monkey digital tool to the SPSS 27 software and analysed using descriptive, inferential and probability tests. The qualitative data was analysed thematically using the NVivo 12 software. The research found that the South African construction industry has the potential and opportunity to contribute to societal infrastructure challenges and that there is a correlation between leadership's ability to drive, influence and manage the relationship between diversity and innovation to advance successful organisational and industry performance. This study provided a framework articulating the mediating influence of leadership on the relationship between diversity and innovation to drive better inclusive societal infrastructure problem-solving in the South African construction industry.

PLAGIARISM DECLARATION STATEMENT

I declare that the contents of this thesis reflect my own work, except for the specific and acknowledged references to the published work of other scholars made in the text. I declare that it contains neither material previously published, nor material submitted in parts or whole for the award of any other degree or qualification.

Signed: Signed by candidate

Kolosa Madikizela

MDKKOL001

DEDICATION

This thesis is dedicated to my late biological father Professor Zandisile Michael Nazo, who was the principal specialist and head of the neonatal unit and critical paediatric care at the Nelson Mandela Academic Hospital, Mthatha. He was an amazing scholar who respected education and I know he would have been extremely proud of this study. I also dedicate this thesis to my beautiful and extremely precious niece Lunathi Esonasipho Cossie, who reminds me of the unwavering grace, faithfulness, and love of God every time I look at her, this is for her and all the future transformational leaders who are going to change this world. This study is also dedicated to the younger Kolosa Madikizela, in me who had dreams of transforming a small part of the world that she could influence positively. This is a testament that her dreams are always valid.

"If you want to awaken all of humanity, them awaken all of yourself.
If you want to eliminate the suffering in the world,
then eliminate all that is dark and negative in yourself.
Truly the greatest gift you have to give is that of your own self-transformation"
Lao Tzu

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"I have learnt that people will forget what you said.
People will forget what you did.
But people will never forget how you made them feel"
Maya Angelou

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DEFINITION OF KEY TERMS AND CONCEPTS

Building: includes: Any structure attached to soil. Any building or such structure or part thereof which is in the process of being erected or any prefabricated building or structure not attached to the soil (Occupational Health and Safety Act, 1993 as amended).

Construction Work: Is the erection, maintenance, alteration, renovation, repair, demolition or dismantling or addition to a building or any similar structure (Occupational Health and Safety Act, 1993 as amended – or as defined in the CR 2014).

Culture: An aggregate product of the processes occurring in human society that typically consists of social phenomena as beliefs, ideas, language, customs, rules, and patterns (Faure & Rubin, 1993).

Cultural upbringing: As used in this study means the body of learned behaviours which one has been taught in the process of their growth within the environment of their family homes as well as their society (Faure & Rubin, 1993).

Discrimination: Any distinction, exclusion, restriction, or preference based on race, colour, descent, or national or ethnic origin which has the purpose of nullifying or impairing the recognition, enjoyment, or exercise, on an equal footing, of human rights and fundamental freedoms in the political, economic, social, cultural or any other field of public life (Sunila Abeyeseekera, 2001).

Diversity: Diversity in this study is defined as age, ethnicity and culture, gender, race, and capabilities (Ayub *et al*., 2013; Lančarič *et al.*, 2015).

Empowerment: Refers to the process of "conscientisation" which builds critical analytical skills for an individual to gain self-confidence to take control of her or his life. Empowerment of women is an essential process in the transformation of gender relations because it addresses the structural and underlying causes of subordination and discrimination (Kornergay, 2000).

Equality of Opportunity: Refers to a fundamental human right embedded in the Constitution of South Africa. This Gender Policy Framework aims at the achievement of *equality of opportunity*, in access to and share of employment opportunities, services and resources as well as in equality of treatment by employers and service providers (Kornergay, 2000).

Equality of Treatment: Refers to meeting the specific and distinct needs of different social categories of women and men. This can often involve special programmes and the commitment of additional resources, for example in the case of women and men with disabilities. Equality of treatment does not mean treating all men and all women in exactly the same way (i.e., in a gender-blind fashion) as this would only serve to perpetuate existing disparities (Kornergay, 2000).

Gender: Refers to culturally and historically specific concepts of femininity and masculinity, and the power relations between men and women. Gender is different from sex; it refers to the social construction of sex roles and the relations between the sexes (Van den Hombergh, 1993).

Innovation: Is the implementation of ideas that have come together to generate novel solutions to problems or improvements to existing systems, processes, products, or attempted solutions (Mannucci & Perry-Smith, 2017; Taylor, 2017).

Knowledge: Is information that can be recalled (Haupt, Chileshe & Miller, 2005).

Leadership: A leader is an individual or a group of people who selects, equips, trains, and influences one or multiple followers who have diverse gifts, abilities, and skills, and focuses these followers on the organisation's mission and objectives, and in this way, motivates them to expend spiritual, emotional, and physical energy willingly and enthusiastically in a concerted coordinated effort to achieve the organisational mission and objectives (Winston & Patterson, 2006).

Skills: The learned ability to bring about pre-determined results with maximum creativity, often with minimum outlay of time and energy or both (Haupt, Chileshe & Miller, 2005).

Workforce Diversity Management: Demographically diverse groups can outperform homogeneous groups on problem-solving and creativity tasks because diverse groups contain a greater variety of information, experience, perspectives, and cognitive styles (Konrad, 2003).

LIST OF ABREVIATIONS

APF	Accelerate Property Fund
BEE	Black Economic Empowerment
BBB-EE	Broad-Based Black Economic Empowerment
CAPI	Computer-Assisted Personal Interviews
CIDB	Construction Industry Development Board
CBE	Council for the Built Environment
CDL	Critical Diversity Literacy
CEO	Chief Executive Officer
CIDB	Construction Industry Development Board
CIOB	Chartered Institute of Building
D&I	Diversity and Inclusion
EXCO	Executive Committee
GDP	Gross Domestic Product
JSE	Johannesburg Stock Exchange
KPI	Key Performance Indicators
SPSS	The Statistical Package for the Social Sciences
MVS	Maximum Variation Sampling
R&D	Research and Development R&D
RDS	Respondent-Driven Sampling
RSA	Republic of South Africa
SAFCEC	South African Forum of Civil Engineering Contractors
SAICE	South African Institute of Chartered Accountants
SSI	Semi-Structured Interview
SPSS27	Statistical Package for the Social Sciences27

CHAPTER ONE:
INTRODUCTION

1.1 INTRODUCTION

This study examines the relationship between leadership, diversity and innovation in the South African construction industry, in relation to its ability to provide inclusive innovative solutions for societal infrastructure challenges. Diversity is defined according to its primary dimensions which are age, ethnicity and culture, gender, race, religion, sexual orientation, and capabilities (Ayub *et al.*, 2013; Lančarič *et al.*, 2015). For the purposes of this study, the focus will be on age, ethnicity, culture, gender, race, and capabilities, in terms of the level of focus these receive and the extent to which they form part of the strategic drive for organisations in the South African construction industry. This will be examined at both a virtual and a deep level. The virtual level includes age, gender, race, cultural, education and ethnicity, while the deep level includes values, attitudes, beliefs, and personality traits (Atyah, 2016). The basis for this study is to advance the understanding of the relationship between diversity and innovation in the context of organisational ideation, performance and inclusive problem-solving in the South African construction industry. In the context of its relationship to diversity, innovation will form an integral part of this research. In this study, innovation is seen as the implementation of ideas that have combined to create groundbreaking or pioneering solutions to problems or improvements to existing, systems, processes, products, or attempted solutions, such as legislative attempts to drive transformation and diversity (Mannucci & Perry-Smith, 2017; Taylor, 2017).

1.2 BACKGROUND TO THE STUDY

Diversity is a critical issue in globalisation and competitiveness of institutions and corporate entities. Several industries, including the construction industry, are traditionally not diverse and consequently further deter women, black people, and people living with disabilities from considering such industries as career choices. The outcome is a specifically exclusive culture that differs significantly from what is seen as a diverse culture wherein everyone feels included, appreciated, and valued and everyone can achieve their potential (Madikizela & Haupt, 2010; Ayub *et al.*, 2013). The challenging nature of the construction industry and its impact on the careers of the previously disadvantaged, women, black people and people living with disabilities have formed the basis of several studies (Dainty *et al.*, 2001; Agapiou, 2002; Madikizela & Haupt, 2010; Ayub *et al.*, 2013).

The aim of these studies was to develop packages of recommendations to address the barriers to the advancement of the previously disadvantaged in their careers. For example, Dainty *et al.* (2001) compared the careers in construction of matched pairs of previously advantaged men and women to establish the reasons for any disparity in their progression and experiences. Their study found that the men's responses differed significantly from the women's responses to most of the measures. Men were opposed to initiatives that threatened the current culture of the industry's operating environment. Dainty *et al.* (2001) further state that if women are to remain in the construction industry in the long-term, then efforts must be made to ensure an equitable workplace environment. Consequently, some industries, like construction, may miss valuable contributions and new thinking approaches which a diverse workforce may add, and which may indeed be needed to achieve the exceptional performance required to solve complex engineering problems (Patrick & Kumar, 2012). Globally, the construction industry holds a unique place in the labour market. It is responsible for the fabric of society; it affects quality of life and is often at the forefront of development and innovation (Fielden *et al.*, 1999). In South Africa, the construction industry has strategic importance as it is a driver of socio-economic development and a key employment multiplier (Veitch, 2020). According to the CIDB 2021 construction monitor on employment, this is not limited to the construction industry solely but includes other industries of the economy such as manufacturing, mining, transportation, real estate, and business services. Research has shown that both globally and in South Africa, the construction industry is characteristically a male dominated industry in terms of employment at all levels, as recruitment at senior and management levels by the construction industry has remained homogeneous, with a marked propensity for companies to attract, recruit and select men (Fieldmen *et al*., 1999; Kornergay, 2000; Haupt & Smallwood 2004; Madikizela & Haupt, 2010; CIDB 2021).

The 2021 South African Construction Industry Development Board (CIDB) Construction Monitor – Employment survey examines employment in the construction industry and the factors affecting employment. The construction industry employs around 1,222,000 people, of which 87% are male and 13% female. In comparison with other industries, the construction industry has the highest proportion of male employment. Male representation in the construction industry is high (87%) compared with the industry average of 56% for all industries (CIDB Construction Monitor – Employment, 2021).

Consequently, there exists a demonstrable under-representation of women, thereby making equality and diversity a significant challenge for the industry (Dainty *et al.*, 2001; Agapiou,

2002; Haupt & Smallwood, 2004). The construction industry is perceived as a low-status and low-tech industry with hard and inflexible working conditions and a persistent 'laddish' culture in a white, male dominated environment. The negative image derived from its identification with stereotyped male values and building site mythology, adversely affects recruitment to the construction industry (Caplan *et al.*, 2009).

Attempts by the post-apartheid South African government to transform the race and class of the construction industry have failed, as only 10% of the 25% black ownership set target had been achieved. In 2013, 80% of public sector tenders was awarded to large contractors in grades 7 to 9 CIDB rating, which implies that the main beneficiary within the sector remains white capital, even within the new government's tender system. Therefore, since apartheid, the trend can be viewed as one of an increasing concentration and centralisation of capital in the established white apartheid-era construction companies (Cottle, 2015). Diversity and Inclusion (D&I), or the lack thereof, is not a new topic in the construction industry. For decades now, most construction participants have been white (Payne, 2020).

A study undertaken in Australia by Poon and Brownlow (2016) established that recent male construction industry graduates are more likely to gain full-time employment than females. Moreover, the dominant role for recent female construction graduates is a secretarial or administrative role, while for males, it is a professional or technical role. In addition, male construction industry graduates are more likely to have a higher level of salary and are more likely to be employed on a permanent contract than their female counterparts. Poon and Brownlow (2016) further state that there is an elevated level of gender imbalance in the construction industry and that this situation has not changed significantly in the past several decades. While Fernandes and Mota-Ribeiro (2017) found that women face social and institutionalised gender barriers when participating in entrepreneurial and business contexts, these are not immediately recognised as real, and their professional qualities and individual attributes are not valued as highly as those of their male counterparts.

According to Navarro-Astor *et al.* (2017), although there has been noteworthy progress in women's educational achievements over the past decades, and their yearly growth exceeds that of men, significant differences remain. Industries such as engineering, manufacturing and construction are still showing signs of persistent gender horizontal segregation.

According to Eagly and Chin (2010), scholars of leadership have infrequently addressed the diversity of leaders and followers in terms of culture, gender, race, and ethnicity. This omission

has hindered research and theory from addressing some of the challenges confronting contemporary leadership. The most significant are the following:

1. Individuals from diverse identity groups have limited access to leadership roles.
2. Leaders' behaviour is shaped by their dual identities as leaders and members of gender, racial, ethnic, or other identity groups.
3. Individuals from groups formerly excluded from leadership roles have the potential to provide excellent leadership because they differ from traditional leaders.

In addressing such issues, Eagly and Chin (2010) further argue that the joining of the two bodies of theory and research - one pertaining to leadership and the other to diversity - enriches knowledge of both domains and provides guidelines for optimising leadership in contemporary organisations and nations. Roberson (2006) further states that, consistent with labour predictions, the workforce of the 21st century has evolved and is now characterised by an increased number of women, diverse races, ethnic backgrounds, intergenerational workers, and different lifestyles.

Organisations have therefore realised that the measure of their success and competitiveness will depend on how well they are able to integrate and manage these demographic workforce changes (Roberson, 2006). Capitman (2002) suggests that among the framing of cultural values there is a deep appreciation for individual differences. People differ in many ways because of gender, environmental and social exposures, and other factors.

A persistent belief is that people, by their choices and efforts, create their own fates. But Capitman (2002) argues that contrary to the notion that individuals have overriding power over their own lives, social science and epidemiology have consistently shown that some of our differences are shaped by socially defined characteristics.

According to Steyn *et al.* (2018), currently, there are increasingly radical calls for systemic change across a spectrum of industries, including construction and engineering, in South Africa. Furthermore, industries are clamouring for change in intransigent organisational cultures whose performance in delivering racial transformation and equality in the workplace has been extremely disappointing. It is argued that a unique way of managing organisations is possible, but that this requires both a commitment to a new set of values, and the possession of the skills to deal with difference, which is summarised as Critical Diversity Literacy (CDL). To improve CDL capacity within organisations, baseline measurements are necessary to tailor interventions and to track progress. Steyn *et al.* (2018) further argue that the transformation

project in South Africa is in crisis. Roberson (2006) suggests that the emergence of new rhetoric in the field of diversity has replaced the term diversity with inclusion. The importance of inclusion as a catalyst and driver for effective and sustainable diversity in the South African construction industry will be an area of focus in this study.

1.3 PROBLEM STATEMENT

The research problem may be stated as follows:

Little is known about the role of leadership in influencing and managing the relationship between diversity and innovation in the South African construction industry. The South African construction industry has not been responsive to market and economic changes and challenges such as, digital disruptive innovation, economic performance, societal infrastructure challenges, skills shortages, rapidly changing workforce demographics, external forced disruptions, increased negative perceptions about the image of the industry. Consequently, the industry has been slow to provide innovative solutions to these challenges. This rapidly evolving societal contextual landscape requires a more diverse workforce in order to specifically respond to and address these challenges. South Africa is faced with many infrastructure challenges, such as inadequate and eroded road and water infrastructure, lack of sufficient housing, and high unemployment of construction graduates, all of which impact negatively on society's most impoverished and marginalised. According to Bhorat *et al*. (2016), notwithstanding the inroads made by South Africa's comprehensive social welfare system in reducing inequalities in access to public services and housing, levels of poverty and inequality in the country, have remained exceptionally high. These social conditions are underpinned by South Africa's high unemployment rate of 25%, Bhorat *et al.* (2016) further contend that this exceedingly high level of unemployment, which is one of the highest in the world, emphasises the exclusive nature of South Africa´s growth path. The value of building plans passed in 2019 amounted to R108.1-billion, with Gauteng, Western Cape and KwaZulu-Natal constituting 37.8%, 26.6% and 16.5% of these plans, respectively. When the National Covid 19 Level 5 lockdown commenced on 26 March 2020, all construction activities were shelved, save for repairs and maintenance of essential services infrastructure.

This contributed to a contraction of the industry, which was already faced with low demand due to a reduction in government expenditure on infrastructure development (The Mail and Guardian, October 2020). In the run-up to the 2010 soccer World Cup, South Africa witnessed a surge in infrastructure development. However, there has since been a shortage of major

construction projects in the country, resulting in a gradual and continuous slowdown in the construction sector. In 2020, the South African construction sector contributed with an added value of 83 billion rand (5.4 billion U.S. dollars) to the country's Gross Domestic Product (GDP). This represents a decrease in comparison to the previous year when the sector's added value to the country's GDP amounted to 104.1 billion rand (Saifaddin Galal, July 2021). According to the CIDB 2021 construction monitor on employment, there has been a sharp decline in the number of people employed in the construction industry since 2017 Q2, employment in both formal and informal employment is on the same level as in 2014.

Given these changing economic and business influences, the problem that is emerging for the construction industry is one of leader preparedness. The South African construction industry leadership´s failure to commit to advancing the industry through diversity and innovative solutions, has led to this state of decline. As a result, the industry is unable to contribute positive, inclusive, innovative solutions to the challenges it faces, and advance organisational performance. The industry suffers from a lack of diversity and transformation and a leadership capability vacuum, which needs to be addressed, for its sustainable recovery and growth.

1.4 RESEARCH QUESTIONS

Research signifies the importance of quality research questions and their role in guiding methodology, data collection methods, and interpretation of results. Research questions, living at the base of methodology, play a key role in quality inquiry (Kross & Giust, 2019). For this study the research questions were formulated and constructed using the literature reviewed as supported by Sandberg and Alvesson (2011), Hällgren (2012) and Tuan *et al.* (2019).

The main research question to be investigated in this study is:

> *How does leadership drive, influence and manage the relationship between diversity and innovation to advance organisational performance in the South African construction industry?*

To address the main research questions, answers were sought to the following specific sub questions:

Research question 1: How important is the proactive management of diversity to the success of the South African construction industry?

Research question 3: How important is the relationship between workforce diversity management and workforce innovation?

Research question 4: How can leadership decisively influence and drive this relationship to improve organisational performance and innovation?

Research question 5: How often is the agenda of diversity and inclusion pushed within organisations in the South African construction industry?

Research question 6: Is there resistance when the agenda of diversity and inclusion is pushed within organisations in the South African construction industry?

Research question 7: What are the experiences of leaders in the South African construction industry when advocating for and promoting the agenda of diversity and inclusion within organisations in the South African construction industry?

Research question 8: What can the construction industry do to improve diversity, inclusion, and innovation in the sector?

Research question 9: What initiatives have leaders in the South African construction industry put in place to advance diversity, increase collaboration and innovation?

Research question 10: Should Leadership in the South African construction industry be focusing more on driving diversity and innovation at a strategic level in their organisations?

1.5 AIM OF THE RESEARCH

The aim of this research study is to investigate and analyse the role of leadership in managing the relationship between diversity and innovation in the South African construction industry. It aims to add to the South African construction industry's body of knowledge on leadership, leadership diversity, diversity, diversity management and innovation.

1.6 RESEARCH PROPOSITIONS

Research propositions are a declarative statement and narration of the concepts being researched. The identification of propositions requires a review of the related literature pertinent to the topics under study. The propositions in this thesis were developed prior to data collection from the literature review and categorised based on their characteristics and their perceived shared attributes, so that the propositions could be compared. The following propositions of this study were identified and developed to justify the concepts of diversity, leadership and innovation in terms of their existence, explanation and relationship with each other (Ivan & White, 2001; Ogunmokua *et al.*, 2021; Shannon, 2021; Nunkoo *et al.*, 2020).

Proposition 1: There is a direct relationship between the lack of diversity in the South African construction industry and its rigid, negative, and untransformed characteristics.

Proposition 2: There is a relationship between the South African construction industry's inability to effectively respond to economic and transformational challenges and the lack of diversity in the industry.

Proposition 3: There is a direct relationship between the willingness of the South African construction industry organisations to recruit from all demographic categories and its lack of diversity and innovation.

Proposition 4: There is a relationship between the ability of heterogeneous organisations to outperform homogeneous organisations on problem-solving, creativity and innovation, and the lack of diversity.

Proposition 5: There is a relationship between the success of heterogeneous organisations and transformational leadership and the commitment to effectively manage diversity and a diverse workforce.

Proposition 6: There is a clear relationship between the South African construction industry's leadership ability and commitment to drive and manage diversity and innovation and organisational performance.

1.7 OBJECTIVES OF THE RESEARCH

The research objectives of this study are to:

Research objective 1: Investigate the perceptions on the level of importance assigned to diversity and inclusion, leadership, and innovation by the workforce and leadership within the construction industry in South Africa.

Research objective 2: Analyse the perceived lack of leadership diversity within the South African construction industry and how this impacts the management of the relationship between diversity and innovation in the South African construction industry.

Research objective 3: Investigate the extent to which the workforce and leadership within the construction industry, view diversity and inclusion as important for driving innovation for better problem-solving and organisational performance within their organisations and the construction industry.

Research objective 4: Evaluate the link between leaderships' drive, influence, and management of the relationship between diversity and innovation to inclusive innovative problem-solving within the construction industry.

Research Objective 5: Determine the relationship between the South African construction industry leaderships commitment to diversity and innovation with the industry's impact on the South African economy and society.

Research objective 6: Develop a framework to articulate the mediating influence of leadership on the relationship between diversity and innovation to advance organisational performance in the South African construction industry

1.8 OVERVIEW OF THE RESEARCH METHODOLOGY

The methodology for this study was based on an approach that assesses the relationship between several constructs, such as leadership's focus, drive, and advancement of diversity and innovation in the construction industry. The constructivist stance maintains that learning is a process of constructing meaning; it is how people make sense of their experience. The social constructivism philosophy denotes that knowledge is constructed from experience and is modified through different experiences. It emphasises the importance of culture and context in understanding what occurs in society and constructing knowledge based on this understanding (Amineh & Asl, 2015; Saunders & Bristow, 2015; Bonache & Festing, 2020). Therefore, a social constructivist research philosophy was adopted in this study as it was deemed best suited due to the complexity of the constructs under investigation. The research philosophy was implemented in the following steps:

1. A literature review was undertaken in the fields of innovation, diversity, gender equality, transformation, legislation that drives transformation, teamwork, team dynamics, construction technologies, construction practices, data technology, change management and methodologies.

2. A mixed methodology, encompassing a convergent parallel design method of data collection and analysis, was used. The research process was symbolised as quantitative and qualitative (Demir & Pismek, 2018). The convergent parallel design used entailed conducting the quantitative and qualitative components in the same phase of the research process, weighing the methods, equally analysing the two components independently and interpreting the results together.

a. Quantitative data – The quantitative data was elicited by means of a structured closed-ended questionnaire survey developed from the literature review and conceptual framework of this study.

b. Qualitative data – The qualitative data collection was conducted using semi-structured interviews with senior leaders in the construction industry.

3. The data was analysed and critically discussed in terms of the literature.

    a. Quantitative data analysis – This data was analysed using descriptive and advanced statistics with the SPSS 27 software tool.
    b. Qualitative data analysis – This data was analysed using thematic analysis resulting in emergent themes that related to the research question, thereby creating the foundation for the development of the substantive theory. The software tool that was used for the qualitative data analysis was NVivo 12 software.

4. Lastly, conclusions were drawn, and recommendations made based on the findings of the study.

1.8.1 Study Area

The study area was Southern Africa. This was a national study, with a focus on the geographically larger provinces of Gauteng, Western Cape, Eastern Cape, and Kwa- Zulu Natal, though distribution to the geographically smaller provinces, such as Limpopo and Northwest were not excluded.

1.8.2 Study Population and sample size

1.8.2.1 Quantitative

The population and sample consisted of all surveyable employees at all levels within the various disciplines in the South African construction industry. The sample technique used was a non – probability sampling strategy using combination of snowballing and RDS sampling technique. This was selected because the distribution of the questionnaire had to be administered via the survey monkey platform. This combination was deemed to be the best to reach a wider population that would otherwise be difficult to reach due to level 5 Covid 19 restrictions (Gile *et al.*, 2015; Parker *et al.*, 2019).

1.8.2.2 Qualitative

The population and sample consisted of Executive Management level leaders in the South African construction industry, focusing on construction organisations, quantity surveying organisations, consulting engineering, and architectural organisations that offer professional services to the South African construction industry. The sample included Senior Management and Executives in Academia, as these play an integral role in the South African construction industry. To ensure representation, leaders from across all the disciplines were included in the sample. Purposive sampling strategy with the snowballing sampling technique will be used.

1.9 SIGNIFICANCE OF STUDY

Given the diversity and innovation challenges faced by the South African construction industry as a result of the leadership failure and ability to commit to the advancement of these issues, as discussed in the definition of the problem statement in section 1.3. This study is significant because it is important for the South African construction industry to be diverse and innovative, with strong and capable leadership to deliver solutions that will respond to the challenges of the 21st century that it faces. The construction industry is a vital part of South Africa's infrastructure development programs and a large contributor to the country's gross domestic product (GDP), and therefore needs to actively develop more diverse teams to be able to remain relevant in an ever-evolving world. The construction industry is well positioned to be a leader in diversity and innovation; however, poor prioritisation and management of diversity is hindering its development. Furthermore, this study is a continuation of a study conducted by the researcher for a master's degree which focused on the career choices of females within the construction industry and the associated barriers to entry. With most of those barriers now seemingly removed through legislation, there has been extraordinarily minor change and progression. This study will expand beyond just gender equality and look at workforce diversity and diversity management from a broader perspective. These impact on the South African construction industry's ability to provide inclusive innovative solutions challenges it is faced with. This study will advance the literature and knowledge on diversity, innovation and leadership in the industry. Therefore, this study is significant not only to the advancement of the workforce and clients serviced by the South African construction industry, but it will also be significant to the economic upliftment of the country, through improved organisational performance and sustainable employment opportunities. This study contributes significantly to South Africa's transformation agenda.

1.10 SCOPE AND LIMITATIONS OF THE STUDY

The limitations of this research are the availability of literature related to Africa and specifically South Africa, in the context of the constructs being researched. Most of the literature reviewed on leadership, diversity and innovation in the construction industry is global, drawn from research conducted in the United States of America and the United Kingdom. Furthermore, studies on the relationship between leadership, diversity, and innovation specific to the construction industry both globally and regionally in Africa and South Africa are limited, further limiting the availability of geographically aligned theory.

A significant part of the diversity and innovation literature reviewed for this study, has been on global engineering, education, technology, humanities, and management studies, with few studies in Africa and even fewer in South Africa. In this study diversity is limited to age, gender, race, cultural, education and ethnicity, values, attitudes, beliefs, and personality traits. Sexual orientation and religious beliefs are excluded in this study. These are excluded as they have many complexities that the time to complete this study would not allow.

1.11 THESIS STRUCTURE

Chapter One: Introduction

Chapter One provides the introductory information and the outline of the research topic. This chapter presents a broad background to the research, the problem statement, research aim and objectives, research questions and justification for the study. The chapter also provides an overview of the research methodology, scope, and limitations of the study.

Chapter Two: Literature Review: Diversity and Inclusion

Chapter two provides the theoretical background to diversity and inclusion relative to the study. This chapter provides an overview of the diversity and inclusion literature relevant to the research topic.

Chapter Three: Literature Review: Leadership

Chapter three provides the theoretical background on leadership relative to the study. This chapter provides an overview of the leadership literature relevant to the research topic.

Chapter Four: Literature Review: Innovation

Chapter four provides the theoretical background on innovation relative to the study. This chapter provides an overview of the innovation literature relevant to the research topic.

Chapter Five: The theoretical and conceptual framework

Chapter five provides the theoretical background on diversity and inclusion, leadership, and innovation relative to the study. This chapter further provides a theoretical overview of the relationship between, diversity and inclusion, leadership and innovation literature relevant to the research topic as well as the conceptual framework of the study.

Chapter Six: Research design and methodology

Chapter six provides the methodology and approach to the study. This chapter presents a comprehensive outline of the research process applied to achieve the objectives of the study. The chapter also describes the methods of data collection and analysis techniques used in the study.

Chapter Seven: Presentation and analysis of the quantitative data

Chapter seven describes the data collected on the relationship between leadership, diversity, and innovation in the South African construction industry. This chapter clearly outlines the results of the quantitative data collected and analysed in the cases under investigation.

Chapter Eight: Presentation and analysis of the qualitative data

Chapter eight describes the data collected on the relationship between leadership, diversity, and innovation in the South African construction industry. This chapter clearly outlines the results of the qualitative data collected and analysed in the cases under investigation.

Chapter Nine: Discussion of results and findings

Chapter nine will present the critical discussion of the findings, in terms of the body of knowledge. The chapter also discusses the contribution to body of knowledge as required for doctoral study.

Chapter Ten: Summary, Conclusions and Recommendations

Chapter ten presents the overall summary of the research findings based on the research objectives. This chapter presents the conclusions to the study and outlines the study's

significant contribution to the body of knowledge. It further presents recommendations and outlines suggestions for future research.

1.12 SUMMARY OF THE CHAPTER

This chapter provided a summary of the entire research study. The background of the study presented an anecdote of leadership, diversity, and innovation in the construction industry and their relation to organisational innovative success and performance. The problem statement of the study described the inability of the South African construction industry to provide inclusive, innovative solutions to the challenges the country faces, as it should be a significant contributor to its infrastructure development and economic performance. The research aim, research objectives, and research question of the study all derive from this problem. The succeeding chapter elaborates on the diversity and inclusion literature reviewed related to the research aim and objectives.

CHAPTER TWO:
LITERATURE REVIEW: DIVERSITY, DIVERSITY MANAGEMENT AND INCLUSION

2.1 INTRODUCTION

In today's ever evolving world, where organisations ceaselessly vie for talent, two components have emerged as crucial globally for strategic planning for success and sustainability, namely, diversity and inclusion. A cultural revolution and changes in demographics influencing the current workplace, forces businesses to use diversity and inclusion as a strategy for success. Accommodating and engaging a more diverse population requires a transition in workplace dynamics. This chapter will discuss the literature on diversity, diversity management and inclusion as it pertains to the research aim and objectives of this study and outline the gaps in the literature as they relate to this study.

2.2 DIVERSITY

2.2.1 History of Diversity

According to Szymanski and Aldighieri (2017), diversity is a North American concept instigated by the Equal Pay Act of 1963 and the Civil Rights Act of 1964. The development of this phenomenon was accelerated by scholars (Cox, 1993; Ely & Thomas, 2001; Thomas *et al*., 2002; Seyd & Özbilgin, 2009; Nikisianis & Stamou, 2011; Lauring, 2013; Szymanski & Aldighieri, 2017) who have successfully framed diversity in a business context. Szymanski and Aldighieri (2017) further state that although cultural diversity has been a subject of anthropological study for 150 years, the concept has only been addressed in management literature in the last 30 years. Since 1992 diversity has gained significant momentum as a topic for research. Over the last 10 years, in particular, the number of academic articles on diversity have increased by 110% as compared to the previous decade. Since the mid-1980s there has been a 500% increase in published articles on the topic. According to Nikisianis and Stamou (2011), conflicting views on the scientific status of the concept of diversity are symptoms of ideological representations inherent in the theoretical context of western ecology. These hidden representations originate from within society. There is an existing assumption of a regular distribution attributed to the influence of organicism and the correlated presuppositions of harmony and homeostasis.

Nevertheless, as species diversity was the only unknown parameter in these models, it reversed the direction of the functions and established itself as the main variable under question. After the 1950s, cybernetics and systems theories have had a significant impact on empowering the concept of species diversity. In this context, diversity was understood as a self-regulating mechanism that assures overall stability. Diversity emerges as a natural and one-dimensional measure of community complexity, maturity, and stability (Nikisianis & Stamou, 2011).

As stated by Escobar (2006), the literary critic Tvetan Todorov enunciated an important question that he referred to as the problematic of otherness, suggesting there is difficulty accepting people who are perceived different as both equal and different at the same time. History, he argued, has provided a plethora of examples in which either of the terms for achieving equality-in-difference is denied. In the past, difference was commonly recognised, but equality denied. This led to domination based on the premise that those who are perceived as different, and inferior should be dominated. In other cases, equality was granted, but difference was denied, leading to assimilation.

It is important to draw a distinction between diversity scholarship, and the traditional approach to individual differences in organisational studies, in order to retain a central focus on power relations among identity groups and avoid diluting the diversity construct to the point that any group composed of non-identical individuals becomes diverse. Beyond visible minorities, an all-inclusive definition of diversity incorporates the collective mixture of human differences and similarities, including educational background, geographic origin, sexual orientation, profession, culture, political affiliation, tenure in an organisation, and other socioeconomic, psychographic, and ethnic-racial characteristics (Kondrad, 2003; Gossen, 2016).

2.2.2 The complexity and challenge of researching diversity

According to Mathieu *et al.* (2008) and Stewart (2010), it is a challenge for researchers to embrace the complexity of this subject. Its complex nature creates much discomfort, and discussions on the subject are often met with resistance. However, through the Human Resources and Industrial Psychology industries, diversity has been researched extensively as part of affirmative action globally, and due to legislative requirements, research has been conducted as a need to ensure compliance and not as a need to advance diversity and innovation.

Diversity is a topic that has been researched extensively in the humanities fraternity, particularly in relation to academia and human resources. Numerous studies have focused on

improving the diversity in organisations, both in industry and in academia. the language used to describe, discuss, and study diversity shapes the ways in which this concept is understood. Like team mental models, researchers have focused a great deal of attention on team diversity. However, when it comes to diversity, progress has been less clear than in team performance (Dani *et al*., 2018). Bettenhausen (1991) identified cultural differences as a critical area of concern for teams. Yet, three meta-analyses (Horwitz & Horwitz, 2007; Stewart, 2006; Webber & Donahue, 2001) have found weak relationships between diversity and team performance.

Reasons for weak relationships, as well as opportunities for refining diversity research, have been advanced by Jackson *et al*. (2003), who point out the need to examine less obvious but more critical types of diversity, to pay more attention to team settings and contexts, and to use more sophisticated multilevel methods of analysis. According to Prieto *et al*. (2009), to remedy the shortcomings of past diversity research and the inconsistency in results, further developments of alternative ways in which group diversity can be conceptualised are required. Diversity affects performance in highly complex and powerful ways. Therefore, there is a significant need for supplementary learning in this field, and practitioners and academics should prioritise understanding these effects

2.2.3 A case for Diversity

Laursen *et al*. (2005) found that diversity can stimulate debate surrounding task related conflict and may eventually result in creative conflict resolution. According to Prieto *et al*. (2009) organisations are seeing the need to employ a workforce that reflects the current demographics of a diverse society, as a major competitive factor for organisations in attracting and retaining the best available human resource talent in the context of the current workforce demographic trends. As women of all races, non-whites, and people living with disabilities, increase in proportional representation in the available workforce in the United States, Europe, and many other parts of the world, including South Africa, it becomes increasingly important for organisations to be successful in hiring and retaining workers from these groups (Prieto *et al*., 2009). Organisations and management researchers have struggled to improve their understanding of how workforce diversity influences organisations, work teams, and individual employees. Empirical studies confirm what organisations already know: namely that the potential benefits of workplace diversity do not accrue automatically (Prieto *et al*., 2009).

Some studies (Webber and Donahue, 2001; Jackson, Joshi & Erhardt, 2003) have uncovered an association between various forms of diversity and improved strategic decision-making,

organisational performance and inventiveness (Prieto *et al*., 2009). According to Horwitz (2005), heterogeneous teams promote creativity, innovation, and problem-solving, which generate more informed decision-making. Researching the need for personality diversity in software engineering, Capretz and Ahmed (2010) found that diversity of skills benefits society and problem-solving. By approaching a problem from multiple perspectives, a diverse team promotes better problem-solving. Their findings also indicate that it takes variety to conquer complexity, and a diversity of skills can solve a myriad of complex problems. Capretz and Ahmed (2010), further assert that organisations would benefit from a conscious attempt to diversify the styles and personalities of their teams, since strong teams are the ones made up of diverse perspectives.

The following are benefits of a diverse organisation according to Lančarič *et al.* (2015):

1. Better Cost Management: the cost of doing a poor job in integrating workers is increasing, so those who manage diversity well will gain a cost advantage.

2. Enhanced Resource-acquisition: organisations that adopt a diversity-management approach will develop reputations of favourability as prospective employers of women and ethnic minorities, so these organisations will attract the best personnel.

3. Better Marketing: multi-national corporations will gain insight and cultural sensitivity from having members with roots in other countries, and this will improve marketing.

4. Heightened Creativity: operating in an environment that values diversity of perspectives and places less emphasis on conformity to past norms should improve creativity.

5. Good Problem-solving: heterogeneity in groups potentially produces better decisions and problem-solving through a wider range of perspectives.

6. System flexibility: the system becomes less standardised, and therefore more fluid, which creates more flexibility to react to environmental changes.

Lančarič *et al.* (2015) therefore suggest that an increased focus on diversity can result in a better understanding of local markets and customers, an increased aptitude to attract and retain the best people, greater creativity, better problem-solving and better flexibility for organisations, including those in the South African construction industry (Pretorius *et al.*, 2018; Simmons *et al*., 2020).

Workforce demographics globally indicate that managing diversity will be on the agendas of organisational leaders. Leading scholars (Cox, 1993; Ely & Thomas, 2001; Thomas *et al*., 2002; Seyd & Özbilgin, 2009; Nikisianis & Stamou, 2011; Lauring, 2013; Szymanski & Aldighieri, 2017), and consultants point out that a well-managed, diverse workforce holds potential competitive advantages for organisations. Diversity also has the potential for competitive advantage through improved problem-solving and decision making (Horwitz, 2005; Capretz & Ahmed, 2010). The rationale for this statement is that of increased creativity through diversity. Diverse groups have a broader and richer base of experience from which to approach a problem, and diversity in decision groups enhances critical analysis (Prieto *et al*., 2009).

According to Gossen (2016), executives understand that their organisations will not be successful on a global platform if they do not have a diverse and inclusive workforce. A diverse and inclusive workforce is necessary to drive innovation, foster creativity, and guide inclusive business strategies. Multiple voices lead to innovative ideas, new services, and new products, and encourage out-of-the box thinking.

Prieto *et al*. (2009) further state that in order to encourage innovation and improve problem-solving and decision-making, organisations are increasingly relying on cross functional work groups and project teams. Often, informational diversity within such teams comes hand in hand with differences, such as demographic characteristics and deeply held values and beliefs. Researchers in the field of diversity have used the theoretical argument of cognitive resource diversity, to argue that the unique cognitive resources that diverse individuals bring to a team enhance its performance.

Gossen (2016) further supports this by stating that successful organisations with diverse work teams relate that these teams are more effective and produce better financial results as well as better results in innovation. In terms of economic benefits, organisations with a high percentage of women in senior positions realised better returns on equity, results in sales revenue, an increased number of customers and profitability. Comparable results are shown in racially diverse companies; organisations with greater racial diversity are associated with greater sales revenue, a larger number of customers, greater market share, and greater profits.

From an economic perspective, then, workplace diversity has a significant impact on profitability, revenue, and productivity. The concept of diversity brings a multi-ethnic, multi-racial, and multi-cultural perspective to organisations because it creates an awareness of diverse

populations both in workplaces and commercial markets. Organisations used a cost-benefit analysis to determine diversity. because they believed that diversity provided benefits for businesses. This fostered the idea of the business case for diversity in the 1980s. The understanding that business could benefit from diversity was a significant breakthrough as it indicated that there was no need to exclude women and/or previously disadvantaged individuals from the workplace, especially since their diversity could provide beneficial business outcomes, such as increasing profit and productivity (Aydin & Rahman, 2017).

2.2.4 South Africa's attempt to drive diversity through legislation

In South Africa historically, job discrimination was institutionalised by law, including job reservation clauses (Republic of South Africa (RSA), 1956). These laws were abolished following recommendations by the Weihahn Commission of Enquiry in 1979. Discrimination on the grounds of race and gender constitutes an unfair labour practice (RSA, 1988).

Furthermore, the South African Constitution outlaw's discrimination in Section 8.2 but makes provision in Section 8.3 for measures designed to achieve adequate protection and advancement of persons or groups or categories of persons disadvantaged by unfair discrimination (Horwitz *et al.*, 1996; RSA, 1996; Kornergay, 2000; Finchilescu & Tredoux, 2010; Jaga *et al.*, 2018).

The Employment Equity Act No 55 of 1998 recognised that apartheid and other discriminatory laws and practices have led to disparities in employment occupation and income within the national labour market. The stated purpose of the Employment Equity Act No. 55 of 1998 is to achieve workplace equity relative to the under-representation of designated groups in employment such as women, people living with disabilities and race. To achieve this end, every employer is required to promote equal opportunity in employment through the elimination of unfair discriminatory policies and practices. The Employment Equity Act No 55 of 1998, further prohibits unfair discrimination directly or indirectly, against an employee, in any employment policy or practice, on one or more grounds, including race, gender, pregnancy, marital status, family responsibility, ethnic or social origin, colour, sexual orientation, age, disability, religion, HIV status, conscience, belief, political opinion, culture, language and birth.

This Act expects employers to implement affirmative action measures to redress the disadvantages in employment experienced by designated groups to ensure their equitable

representation in all occupational categories and levels in the workforce. The Act specifically prohibits unfair direct and indirect discrimination based on gender (RSA, 1998; Hutson, 2007).

The implementation of BEE and then later BBB-EE was a further attempt by the South African Government to drive diversity through transformation to eradicate the wrongs of the past and create equal opportunities for all. Black Economic Empowerment (BEE) considers the economic empowerment of black people by means of ownership and management only. However, Broad-Based Black Economic Empowerment (BBB-EE), seeks to incorporate more than just the element of Ownership and Management in increasing the economic participation of black people, including women (black or white), workers, youth, those with disabilities and rural communities (Mudeliar, 2018).

2.2.5 Construction industry transformation challenges post legislative attempts

The post-apartheid period in South African history will most likely be detailed as the most positive legislative time for women ever, yet the construction industry appears to continue to exclude women, both professionally and at skills and crafts level. In South Africa, there are very few women on construction sites and, therefore, no role models. With few women in leadership roles in construction industry there has not been a positive image of achievers to inspire and promote women. Neither have there been women in the applicable positions to drive initiatives for women to be trained and employed in construction skills or to drive support for women's requirements in the construction workplace (English & LeJeune, 2012; Sunindijo & Kamardeen, 2017). Significant change in the image and the culture of the construction industry is necessary to attract and retain more women, the previously disadvantaged and young professionals into the construction industry. The construction industry cannot expect to benefit from a more socially representative workforce unless it addresses the issue of its male-dominated culture. Existing legislation is insufficient to address the lack of transformation in the industry. There is a need for fundamental change to occur within the construction industry. Construction organisations should not only rely on legislation in implementing fair and inclusive employment policies but may also need to proactively manage diversity perceptions for different groups. This will ensure active and inclusive engagement to drive transformation and diversity beyond legislative requirements (Shrestha *et al.*, 2020; Maharaj & Atewologun, 2021).

2.3 DIVERSITY MANAGEMENT

Diversity management encompasses the creation and implementation of comprehensive organisational and managerial processes that underpin a corporate culture in which diverse thinking and perspectives can be openly expressed and respected and leveraged for the benefit of the business, the employee, and the community (Szymanski & Aldighieri, 2017). Current modern workplaces consist of various cultures, genders, ages, and ethnicities. This diverse work environment provides opportunities for employers to create and promote organisational strategies that value and manage diversity while limiting barriers and prejudices. Managing diversity is a strategic effort, and allows organisations to take advantage of the economic, creative, and innovative advantages that diversity brings. This involves a commitment to human resource management systems such as, recruitment policies, reward programs, performance appraisals, employee development and individual managerial behaviours in achieving competitive advantage through leadership and teamwork (Gossen, 2016).

According to Agerova *et al.* (2013) diversity management has become ever more critical, because of general changes in the society, demographic development, and globalisation of the labour market. In addition, to survive in the current highly competitive and global business environment, organisations must pay attention to the issue of diversity management and make beneficial use of the potential that diverse teams have to offer.

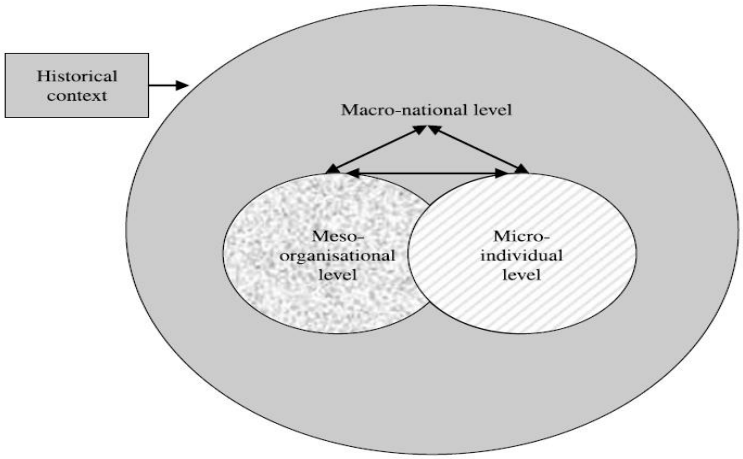
The basis of diversity management can be seen in the natural substance of diversity existing in human society, where diversity of people from the point of their age, gender, race, ethnicity, mental and physical abilities, and other characteristics is a natural thing. The notion of diversity management has a broader meaning than the that of diversity itself. The concept of diversity management dates to 1980s, but it was not until a few years ago that it spread further to the field of the management theory and practice. It is, therefore, a new phenomenon in management theory and practice, and a new field in management, which continues to develop (Agerova *et al.*, 2013).

According to Gossen (2016), diversity management is a strategy used by many organisations seeking to create a working environment that allows employees to reach their full potential as they pursue organisational objectives. This type of management is an ongoing, systemic, and planned commitment on the part of the organisation to recruit and retain employees with diverse experiences and skills.

In recognising differences in all core business management functions, effective diversity management practices must stem from adult learning theories that contextualise the workplace as both a social and collaborative learning environment, while respecting difference and building strength through individual and collective relationships. It is also necessary to integrate the economic, sociological, and educational disciplines into the managerial discussion of diversity (Gossen, 2016). Diversity is a social experience very closely related to globalisation. Employee diversity consequently supports creativity and a capacity for innovation within teams at the organisational level, and yet diversity influences the workforce as well. Diversity can provide the basis for competitive advantage, and diversity management is, consequently, becoming an important approach in workforce management. Diversity management is an imperative area of strategic management that assists organisations to identify differences between employees to shape a knowledge base and to continually prosper through the use of a synergistic effect (Seymen, 2006; Suri & Sharma, 2011; Urbancová *et al*., 2020).

Seyd and Özbilgin (2009) argued that the concept of 'diversity management' originated in the US and has been widely adopted in the industrialised countries of the West including the UK, Canada, and Australia. The concept is shaped by the demographic, socio-cultural and economic realities in the US and other Western contexts. However, there are concerns that a US-centric approach may not hold well for diversity management in other national contexts, such as South Africa, due to differences in socioeconomic conditions, national legislation, culture, demography and history as shown in Figure 2.1 and Table 2.1. In addition, there are concerns regarding the theoretical rationale, and the practical outcomes of the extant approaches to diversity.

According to Seyd and Özbilgin (2009), empirical studies undertaken in the US, UK and other industrialised countries have confirmed that despite a plethora of equal opportunity laws and organisational initiatives, ethnic minorities, women, and other historically discriminated-against groups continue to remain disadvantaged and disempowered in organisations relative to their white male counterparts. This is attributed to the negative characteristics of the industry that continues to attract, promote and retain white males (Madikizela & Haupt, 2010; Sunindijo & Kamardeen, 2017; Shrestha *et al*., 2020). In addition, Seyd and Özbilgin (2009) found that, single-level conceptualisations of diversity management within the territory of legal or organisational policy fail to capture the relational interplay of structural- and agentic-level concerns of equality as shown in the following figure 2.1 and table 2.1.



Source: Seyd & Özbilgin (2009)

Figure 2.1: A relational perspective of diversity management

Table 2.1: A relational perspective of diversity management

Relational Level	Description	Examples of Variables	Examples of Research questions
Macro- National	Institutional Structures, Social difference codes and processes	Legislative framework of equal opportunity and diversity, socio-political policies, labour market, economy, demography, history	✓ To what extent does the history of the local context shape diversity management practices? ✓ To what extent do national laws and labour policies effectively provide equal opportunities to diverse workers? ✓ What stereotypes attach to different group
Meso – Organisational	Organisational policies and hierarchies	Organisational approaches towards diversity benchmarking and evaluation	✓ To what extent do organisational structures and policies afford equal opportunities to diverse workers. ✓ To what extent do interactions and relationships at the level of the organisation inform the logic of diversity policies and practices
Micro- Individual	Identity and subjective experience in the workplace	Individual agency, perspectives and experiences, multiple identities	✓ To what extent do diversity workers' individual lifestyles and values affect their integration or lack thereof in the workplace? ✓ To what extent do diverse workers' multiple and intersecting identities influence their career trajectories?

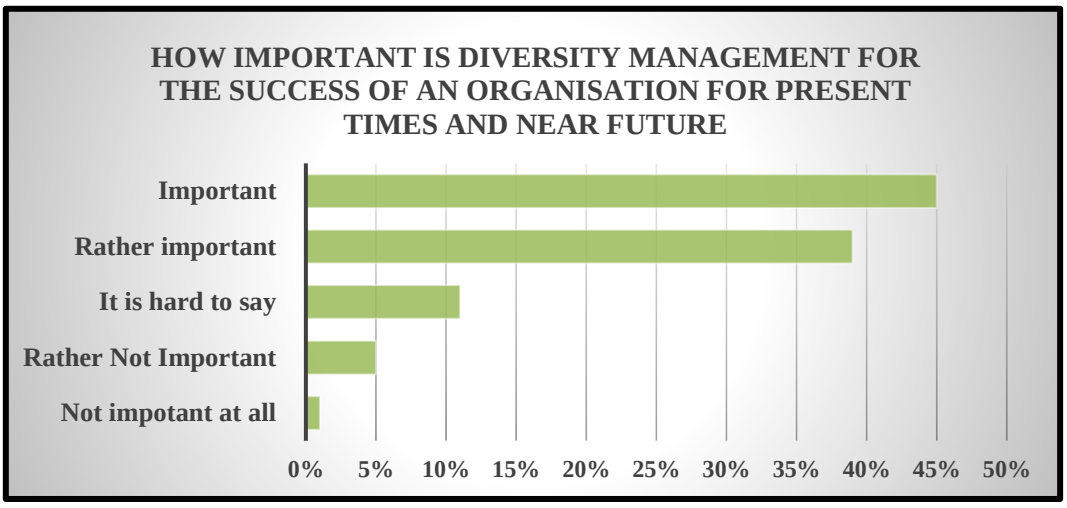
Source: Seyd & Özbilgin (2009)

Diversity management is a process intended to create and maintain a positive work environment where the similarities and differences of individuals are valued (Patrick & Kumar, 2012). According to Gossen (2016), since a diverse and inclusive workforce is necessary to drive innovation, foster creativity, and guide business strategies, many organisations are making a business case for diversity management that is linked to their innovation strategy.

As stated by Szymanski and Aldighieri (2017), diversity management is a multifaceted concept and includes three components: recruitment programs, programs aimed at increasing cultural awareness, and pragmatic management policies.

2.3.1 The importance of Diversity and Diversity Management for organisational success

In their study Szymanski and Aldighieri (2017) asked their participants to rate the importance of diversity management for the success of an organisation for present day and near future. The results of their study are shown in the figure 2.2 below. The study found that in most of the cases, diversity management is perceived to be especially important (42%) or rather important (39%) for the success of an organisation at present and in the future. A total of 81% of the participants believe that diversity management is a significant element of corporate governance (Figure 2.2). Their cross-sectional study showed how various groups of participants differ. Statistically significantly (Z=2.275; p=0.023) women in this variable have higher results (M=4.31) than men (M=3.88). A further interesting finding by Szymanski and Aldighieri (2017) was that women look more bravely at managing diversity and see more potential in it than men. This finding was confirmed by further studies and results from the cognitive experience of the groups they surveyed.



Source: Szymanski & Aldighieri (2017)

Figure 2.2: The importance of Diversity Management for the success of an organisation

Empirical research supports the notion that diversity management can have a positive spill-over effect in the workplace. The creativity of teams that were homogeneous on a series of attitude measures was compared against teams with heterogeneous attitudes. Problem solution creativity was judged on originality and practicality. Results indicated that if the team members

had similar ability levels, the heterogeneous teams were more creative than the homogeneous ones (Patrick & Kumar, 2012).

2.3.2 Workforce Diversity Management

According to Otike *et al.* (2011) workplace diversity management is the systematic and planned commitment by the organisation to recruit, reward and promote a heterogeneous mix of employees. Workforce diversity refers to the structure of work groups in terms of the cultural or demographic features that are salient and symbolically meaningful in the relationships among group members (Gossen, 2016).

Workforce diversity is considered a key challenge for human resource management in modern organisations. While workforce is strategically important, many models in this field implicitly consider it a generic and homogeneous category and give no consideration to cultural differences among employees. Management of a cross-cultural, diverse workforce requires a complete shift of HR strategies. Efforts to develop diversity-oriented strategic human resource management models are still weak and presented in only general terms (Alcázar *et al*., 2013).

In their study on workforce diversity Alcázar *et al*. (2013) found that previous literature has identified both positive and negative effects of workforce heterogeneity. They argue that the extent to which diversity will benefit organisational performance will depend on how the organisation manages heterogeneous groups. They conclude that considering the limitations of previous literature, to fully understand how workforce heterogeneity can be managed, further research questions need to be addressed.

Workforce diversity is a complex phenomenon to manage in an organisation. The management of workforce diversity as a tool to increase organisational effectiveness cannot be ignored. Organisations that value diversity will cultivate success and have a future in this dynamic global labour market (Otike *et al.*, 2011).

2.4 INCLUSION

2.4.1 The role of inclusion in driving sustainable diversity and innovation management

One of the most significant problems facing today's diverse workforce is that of inclusion, the sense of being an integral part of the organisation. Future research is needed to continue building a global understanding of inclusion in the workplace. Studies of inclusion across a range of both cultures and types of organisations are necessary to further understand the

delicate contextual nuances resulting in powerful organisational outcomes (Barak *et al*., 2001). According to Szymanski and Aldighieri (2017), workplace diversity management has primarily focused on increasing the number of underrepresented individuals in organisations. Nevertheless, the global market is currently undergoing a shift from basic assumptions to a view that elevates values as a critical diversity factor. Today's workforce is looking beyond visual representations of diversity for proof that an employer is offering an inclusive work environment. Potential employees desire meritocratic work environments where the totality of an individual's diverse contributions and lifestyle choices are as important as their demographic differences.

Szymanski and Aldighieri (2017) further state that inclusion is important for businesses that aim to promote innovation and have an impact on the bottom line. Organisations must find ways to incorporate the insights of people who reflect the growing diversity of consumers. Inclusion not only means hiring a diverse, talented workforce but also engaging those workers, so they become active contributors to the brand equity.

According to Wallace *et al.* (2014), diversity and diversity management have traditionally operated within the lens of "bottom-line" business strategies. These traditional responses to diversity management have resulted in disappointment for many organisations. Stewarding an organisation's culture, including its diversity management is becoming increasingly complex with globalisation and a multicultural workforce. If diversity is about cultural norms and values, more attention should be paid to organisational culture and specifically a culture of inclusion that must be built on solid moral grounds. It is believed that inclusion provides a bridge between interpersonal differences and a person's ability to contribute effectively to the organisation. For this reason, organisations often view policies and practices that promote inclusion as having the potential to integrate diverse people into work teams and organisations, helping teams to work more effectively and promoting positive individual and organisational outcomes (Szymanski & Aldighieri, 2017).

In management theory and business practice dealing with diversity, especially a diverse workforce, has played a prominent role in recent years. In a globalising economy, organisations recognised the potential benefits of a multicultural workforce and tried to create more inclusive work environments. However, many organisations have been disappointed with the results they have achieved in their efforts to meet the diversity challenge. The reason for this is that while much attention has been paid to the strategic dimension of diversity policies, systems, and

processes, much less thought has been given to the normative dimension, the norms and values involved. Given the fact that diversity is about cultural norms and values, appropriate reflection becomes a fundamental task to create a truly inclusive work environment where people from diverse backgrounds feel respected and recognised (Pless & Maak, 2004).

2.5 THE ROLE OF DIVERSITY AND INCLUSION IN THE SOUTH AFRICAN CONSTRUCTION INDUSTRY

The role of diversity and inclusion in engineering education and practice has gained prominence in recent years since engineers are facing an increasing need for global collaboration and are expected to be able to work in highly diverse teams and within diverse cultures (Otike *et al.*, 2011; Szymanski & Aldighieri, 2017). Diversity and inclusion initiatives in the field of engineering include gender, ethnicity, and national origin and may include persons who are economically underprivileged and persons with disabilities. Diversity and Inclusion are important to ensure the success of engineering for innovation through diverse perspectives, the mobilisation and allocation of human resources, and the development of cross-cultural awareness and acceptance (Delaine *et al.*, 2016). In their recent study, Baker *et al*. (2021) argue that selection and recruitment diversity initiatives support the hiring of diverse employees and can create opportunities for diverse employees to work together to contribute to the organisation. Furthermore, innovation in managing organisational problems and opportunities has also been shown to increase when a diverse group applies a greater variety of information, skills, knowledge, and perspectives. Table 2.2 details the rationales for diversity and inclusion.

Table 2.2: Rationales for Diversity and Inclusion

Rationales for Diversity and Inclusion	
Social Justice	Focus on racial integration, elimination of institutionalised inequalities, and equity in democratic participation.
Remediation	Focus on the societal need for more disadvantaged people to join the workforce and contribute to the economy
Economics	Focus on the remedial rationale is a moral justification aimed at righting the wrongs of the past and emphasising compensatory, corrective action to rectify unfair treatment by race, ethnicity, age, and gender.
Diversity	Focus on the significant benefits of diverse organisations, specially that improve working experiences, innovation and problem-solving.

Source: Dalaine et al. (2016)

In the past 20 years, diversity and inclusion have grown as corporate imperatives. One commonality around the world, including in South Africa and the South African construction industry, has been a heavy focus on hiring and promoting women to close the gender gap (English & LeJeune, 2012; Sunindijo & Kamardeen, 2017). The focus on women is understandable as they constitute 50% of the global population and are easier by comparison to integrate into an organisation. This is largely due to women having fewer overall cultural differences with men who are heavily represented at the highest levels in the corporate workplace. As a result, most business leaders are concerned about large gaps in mirroring the general population, particularly regarding three systematically under-represented groups, namely workers over the age of 50, individuals with disabilities, and religious and ethnic minorities. In the coming years, it will be important for companies to overcome the hurdles that prevent these groups from being incorporated into the highest levels of an organisation (Eagly & Chin, 2010; Coleman, 2012; Chin & Trimble, 2014; Szymanski & Aldighieri, 2017).

Inclusion is a global trend that requires the involvement of, and collaboration between, all professionals within an industry (Hwang & Evans, 2001). The South African construction industry is no exception and should therefore embrace and drive diversity and inclusion. Leadership accountability, especially as it relates to diversity and inclusion, must be 360-degree and multi-dimensional if it is to truly be effective. Lateral accountability mechanisms tend to omit the voices and feedback of a diverse workforce. Traditional leadership governance often reinforces historic, systemic, and institutionalised beliefs and behaviours that contradict truly work inclusive environments (Corley, 2020).

2.6 SUMMARY OF THE CHAPTER

This chapter provided an outline of the extant literature on diversity, diversity management and inclusion as it relates to this study's research aims and objectives. The literature presented in this chapter examined the history of diversity and the complexities in researching it, it further expanded on diversity management, workforce diversity management and the importance of inclusion in ensuring that organisations manage diversity effectively. The following chapter will provide an outline of the leadership literature reviewed as it pertains to this study.

CHAPTER THREE:
LITERATURE REVIEW: LEADERSHIP

3.1 INTRODUCTION

Transformational leadership refers to leaders who seek to generate ideas and new perspectives to create a new path of growth and prosperity for the future of an organisation or industry. By developing commitment, passion and loyalty among managers and the workforce, they mobilise an organisation's members to make changes in the fundaments of the organisation for the purpose of being prepared and gaining the necessary capabilities for moving in new directions and reaching higher performance peaks. This chapter will discuss the literature that has been reviewed on the concept of leadership, transformational leadership, and leadership research in the construction industry as it pertains to the research aim and objectives of this study. In addition, it will outline the gaps in the literature as these relate to this study.

3.2 LEADERSHIP

3.2.1 Leadership research

A key issue in leadership research is that there has been no convergence toward a reasonable number of cogent leadership theories. Current knowledge about leadership consists of narrow definitions of leader effectiveness that are disconnected from their context. Consequently, the application to practice is difficult. Additional research is required that develops leadership frameworks and models that integrate transformational, servant, and spiritual leadership theories and includes the context and a definition of success based on creating value for multiple stakeholders (Latham, 2014; Sethibe & Steyn, 2015). The quest of the last 50-plus years to find the universal definition of effective leadership has possibly been misguided and unattainable. Researchers have not been able to converge on a universal answer, which may be an indication that there is no universal answer to leadership. The same argument could be applied to research on diversity and gender equality (Latham, 2014).

Inyang (2013) suggests that leadership is a process of influencing people to work towards the attainment of organisational goals. For many decades, leadership research tended to take a one-sided view, emphasising the positive and constructive aspects, while paying scant attention to the dark side of leadership–leadership derailment. Consequently, extraordinarily little has been written on the latter.

Inyang (2013) further states that the recent corporate failures and scandals and the 2008 economic crises are related to leadership failures. A consideration of the dark side of leadership is likely to increase knowledge and the ability to develop effective leaders needed for the 21st century.

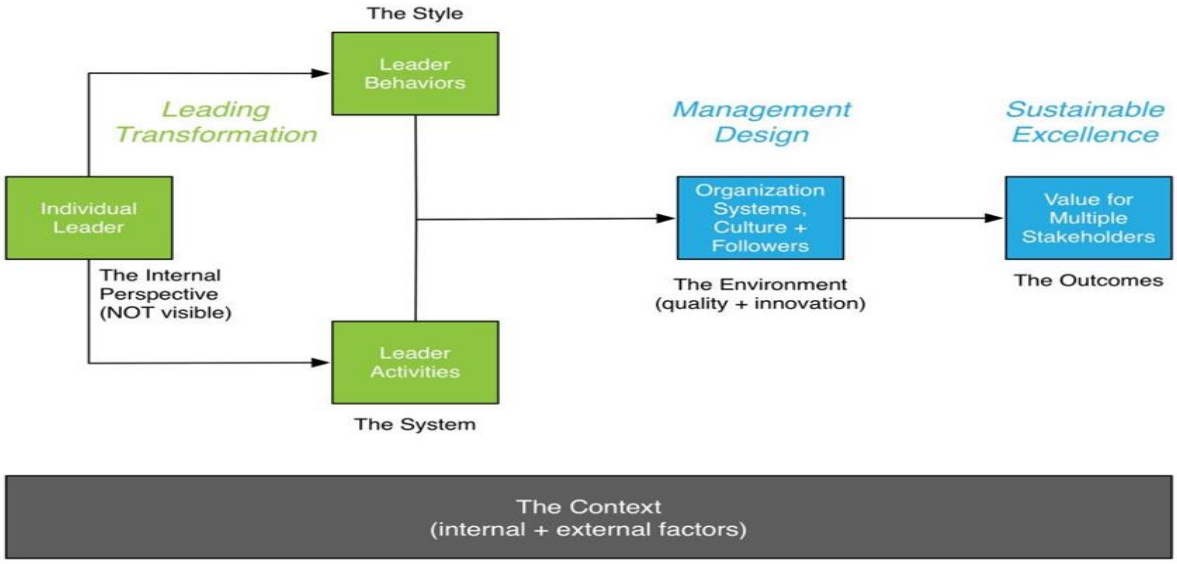
According to McCleskey (2014), one of the earliest studies of leadership, Galton's (1869) Hereditary Genius, emphasised a basic concept that informed popular ideas about leadership. The idea is that leadership is a characteristic ability of extraordinary individuals. This concept of leadership, known as the great man theory, evolved into the study of leadership traits. Among multiple definitions and conceptions, the correct definition of leadership depends on the specific aspect of leadership of interest to the individual. McCleskey (2014) examined three specific conceptions of leadership: situational, transactional, and transformational leadership. This research will focus on transformational leadership. McCleskey (2014) describes transformational leadership as the ability to raise the follower´s level of consciousness about the importance and value of desired outcomes, and the methods of attaining those outcomes and convincing followers to transcend their self-interest for the sake of the organisation.

Inyang (2013) and Kelan & Wratil (2018) claim that leadership is one of the most researched (Bass & Bass, 2009; Avolio *et al.*, 2009; Kellerman, 2013) topics in management and organisation literature. Hogan and Kaiser (2005) see leadership as a real and vastly consequential phenomenon and the single most prominent issue in the human sciences. McCleskey (2014) asserts that there is a need for further study on the relationship between transformational leadership and team performance and argues that the suitability of transformational leadership varies according to context. Furthermore, he contends that there is a need for additional empirical work on the relationship between transformational leadership and team outcomes and that there are no existing previous empirical studies on work adjustment in international settings as an outcome of leaders' behaviours.

According to Winston (2001), leadership theory focuses on the study of the ways in which individuals can influence the success of organisations through their efforts and those of others. It provides a worthwhile basis for the consideration of issues of diversity as related to organisational success. Issues of diversity in relation to leadership have been addressed to a limited extent in the research literature, and only in relation to gender and race differences.

Leadership scholars must continue to engage in thorough and thoughtful research into the connections between development and efficacy, organisations, and outcomes, and between

leaders and followers. That is both the future challenge and the historical past of leadership (McKleskey, 2014; Latham, 2014).



Source: Latham (2014)

Figure 3.1: Framework for future leadership research

3.2.2 The role of leadership

A leader is one or more person(s) who selects, equips, trains, and influences one or more follower(s) who have diverse gifts, abilities, and skills, and focuses the followers on the organisation's mission and objectives, causing the followers to expend spiritual, emotional, and physical energy willingly and enthusiastically, in a concerted, coordinated effort to achieve the organisational mission and objectives. The leader achieves this influence by humbly conveying a prophetic vision of the future in clear terms that resonate with the followers' beliefs and values in such a way that the followers can understand and interpret the future into present time action steps. In this process, the leader presents the prophetic vision in contrast to the present status of the organisation. Using critical thinking skills, insight, intuition, and both persuasive rhetoric and relational communication, including active listening and positive discourse, the leader facilitates and elicits the opinions and beliefs of the followers such that the followers move through ambiguity toward clarity of understanding and shared insight. The result is that the followers come to see and accept the future state of the organisation as a desirable condition and believe that it is worth committing personal and corporate resources to achieve this end. (Winston & Patterson, 2006; Latham, 2014; Korejan & Shabhazi, 2016).

Korejan and Shabhazi (2016), state that the importance of leadership in change management has been emphasised by the fact that change requires a new system and the institutionalisation of novel approaches. Leadership styles and behaviours of a manager have a significant impact on the type of needs and awareness of the workforce. The reaction and attitude of the organisation's workforce to organisational changes and their choice to support or resist organisational changes depend on the leadership style of a leader. Latham (2014) argues that the role of leadership in 21st century is more difficult because the number and type of stakeholders exerting pressure on organisations have expanded beyond a narrow focus on investors and customers to include stakeholders such as employees, suppliers, and partners, along with the community and the natural environment. Since the quality crisis of the 1980s, many 21st century leaders have proposed that creating value for multiple stakeholders requires trade-offs between the stakeholders in a zero-sum game. Alternatively, innovation and imagination can be utilised to reinvent the methods and systems which can ultimately create value for multiple stakeholders.

Leadership is important to consider in relation to acceptance of innovations and to work attitudes, perceptions, behaviours, service quality, and client outcomes (Aarons, 2006). Modern organisations must be ambidextrous (i.e., able to execute and innovate) to be successful because of the multiple environmental pressures they face and because they must organise a diverse workforce to do this work. Organisations that are only good at one or the other will not survive, let alone thrive, in the coming decades (Latham, 2014).

3.2.3 Transformational Leadership

21st century organisations that wish to endure and develop must implement broad organisational changes. To this end, organisations need to take steps to increase their knowledge and awareness about the environment in which they operate. In this context, it becomes clear that leaders must assume the responsibility for moving the organisation toward the future, recognising the environmental needs and facilitating pertinent changes. Such leaders are called transformational leaders, who can strengthen the workforce´s understanding and justice and improve the quality of work life in the organisation (Korejan & Shabhazi, 2016).

According to Dvir *et al.* (2002), transformational leaders evaluate the potential of all followers in terms of their ability to fulfil current commitments, while also envisioning expansion of their future responsibilities. They concluded that transformational leadership, enhanced by training,

can augment the development of human resources and their performance in a variety of organisational contexts.

Transformational leadership is a process of building commitment to organisational objectives and then empowering followers to accomplish those objectives, The result, in theory, is enhanced follower performance. Transformational leaders transform the personal values of followers to support the vision and goals of the organisation by fostering an environment where relationships can be formed and by establishing a climate of trust in which visions can be shared (Stone *et al.,* 2004). There is growing interest in the influence of transformational leadership on creativity and innovation. Transformational leaders raise the performance expectations of their followers. Researchers have studied the effects of transformational leadership on the performance of followers and organisations in the past decade (Howell & Avolio, 1993; Lowe *et al.,* 1996; Dvir *et al.*, 2002) but only a handful of studies have examined the effects of this type of leadership on followers' creativity (Gumusluoglu & Ilsev, 2009). Stone *et al*. (2004) further state that transformational leaders are visionaries, generate high levels of trust, serve as role models, show consideration for others, delegate responsibilities, empower followers, teach, communicate, listen, and influence followers.

In their study of how transformational leadership enhances followers' job attitudes and proactive behaviour, where the purpose of their study was to examine the linkage between transformational leadership and followers' job attitudes as well as their proactive behaviour focusing on the goal setting process, Steinman *et al.* (2018) found that transformational leaders influence the extent to which followers evaluate organisational goals as important and perceive them as attainable. Furthermore, their results showed that, how transformational leaders exert their impact on followers' job satisfaction, organisational commitment, and proactive behaviour through the goal attributes importance and attainability. Their findings suggest that these attributes are decisive in one's pursuit of a goal, regardless of whether the goal is self-set or assigned. Table 3.1 outlines the dimensions and key indicators of transformational leadership.

Table 3.1: The Dimensions and indicators of transformational leadership

Dimensions of Transformational Leadership	Key Indicators
Idealised Influence	✓ Instilling a sense of pride and honour in the workforce to connects with each other. ✓ Showing a sense of power and competence. ✓ Acting in a manner that raises others respect. ✓ Sacrificing personal interests for others' interest.
Inspirational Motivation	✓ Talking optimistically about the future. ✓ Talking seriously about things that should be done. ✓ Emphasising on the importance of foresight. ✓ Giving hope to the workforce about achievable goals.
Intellectual Stimulation	✓ Careful examination of offers to ensure their suitability. ✓ Considering different perspectives while solving a problem. ✓ Requesting for examination of problems from different perspectives. ✓ Suggesting new ways of how to conduct tasks.
Personal Consideration	✓ Allocating time for guidance and training. ✓ Treating the workforce as people and not just employees. ✓ Considering people with diverse needs, abilities, and creativities. ✓ Helping others to develop their capabilities.

Source: Korejan and Shabhazi (2016)

3.3 DIVERSITY IN LEADERSHIP

According to Eagly and Chin (2010) there are many processes through which diversity can affect leadership. The multiplicity of influences is not surprising, given that leadership involves many social and individual processes. As social process, leadership involves dyadic, group and organisational levels. As individual cognitive and perceptual processes, leadership requires the recognition and approval of leadership in others and the recognition of oneself as a leader. They further state that changing demographics are fostering an examination of how leadership theories intersect with dimensions of diversity. As the population throughout the world becomes increasingly diverse, the contexts in which leadership occurs within institutions and communities will also become increasingly heterogeneous. Until recently, leaders around the world have mirrored the dominant majorities of their societies. However, even as more women and previously disadvantaged groups enter leadership positions, the power elite (meaning those who own and manage organisations), finance the political campaigns, and serve in government

as appointed legislative leaders, remain quite homogeneous (Chin, 2010; Kelan & Wratil, 2018) a clear indication that diversity at leadership levels remains a challenge.

3.3.1 Themes of diverse leaders

In their 2016 paper titled "Making way for paradigms of diversity" Chin *et al*. (2016) reported on the findings of a one-day Leadership diversity workshop. At the workshop, a diverse group of leaders was asked to share how they viewed their leadership, how their dimensions of identity and lived experiences influenced their exercise of leadership, and how diversity influenced their leadership style. The participants identified the following themes of diverse leaders as depicted in the below Table 3.2.

Table 3.2: Competency Framework for Diversity Leadership

Competencies	Competency Dimensions
Leveraging personal and social identities	✓ Recognising intersectionality ✓ Leading authentically ✓ Balancing self-promotion with being humble ✓ Projecting confidence in the face of identity backlash. ✓ Building trust and demonstrating integrity across diverse groups
Utilising a global and diverse mindset	✓ Being culturally competent ✓ Demonstrating cross cultural flexibility ✓ Promoting diverse and inclusive leadership styles
Leveraging community and organisational contexts	✓ Drawing from lived experiences ✓ Developing affinity networks and engaging with diverse communities ✓ Self-protection
Promoting a diversity-supportive and inclusive climate	✓ Communicating effectively across diverse groups ✓ Advancing a shared vision for diversity ✓ Mentoring diverse employees ✓ Maintaining accountability for promoting diversity in the workplace

Source: Chin et al. (2016)

Chin *et al.* (2016) resolved that, given the shortcomings of the leadership literature in addressing the diverse nature of leaders and leadership, they would encourage future researchers to continue to question the universal applicability of existing theories of leadership and to create new theories of leadership. They further concluded that starting from the margins may aid in creating a better and more complete picture of leadership in the 21st century. The workforce of the 21st century expects more from their leaders. They require them to be more connected and responsive to the issues of diversity and inclusion not in terms of lip service or feigned action, but with true dedication and sustained commitment. However, leaders have

failed to cultivate inclusive work environments that inspire and empower the workforce and foster a sense of engagement and belonging among their employees (Corley, 2020).

3.4 LEADERSHIP IN THE SOUTH AFRICAN CONSTRUCTION INDUSTRY

3.4.1 The importance of leadership in change management

The importance of leadership in change management has been emphasised by the fact that change requires a new system and institutionalisation of novel approaches. Undoubtedly, the behaviour and leadership style of a manager have significant impact on the needs and awareness of the workforce (Korejan & Shabhazi, 2016).

3.4.2 Leadership Challenges in the Construction Industry

The construction industry has been categorised as one of the most difficult environments in which to successfully lead teams effectively to achieve organisational success. Despite advances in technology and management, the construction industry remains a labour-intensive industry with considerable costs, on most projects, spent on human resources. There is a need for influential leaders to respond to the evolving social, economic and environmental challenges of the construction industry. Studies on leadership in other industries such as social sciences (Avolio *et al.*, 2009; Bass & Bass, 2009) have shown that influential leaders tend to demonstrate a high level of emotional intelligence. Little or no research examining relationships between leadership style and emotional intelligence has been conducted specific to construction project managers (Potter *et al.*, 2018). Therefore, construction and civil engineering professionals are identifying a growing need for improved leadership development, within the industry. However, many academic and workforce professions lack a clear definition of leadership that aligns with construction and civil engineering industry environments (Simmons *et al*., 2020).

Influences such as globalisation, advancing delivery mechanisms, and changing organisational structures require business decisions that challenge the traditional transactional focus of the industry. Given these changing business influences, the problem that is emerging for the construction industry is one of leader preparedness. One primary concern for the construction industry is the development of leaders who have the knowledge and skills to address rapidly changing business environments. Leadership’s ability to transform organisations in response to dynamic market forces is critical for sustained success within the construction industry.

Additionally, the potential for leaders to motivate the internal workforce as well as communicate to a diverse project team, is a challenge to leaders within the industry to develop their interpersonal leadership skills (Butler & Chinowsky, 2006; Simmons *et al*., 2020).

3.4.3 The need for transformational leadership in the construction industry

Leadership is important in all fields of human endeavour, even more so in the construction industry where certain features of the construction process and construction projects render leadership vital. Construction projects are expensive and technically demanding and require large and diverse project teams. The process is long and involves many discrete and interrelated tasks. Because constructed products influence long-term socioeconomic development in developing countries, deficient performance on projects can have severe implications for the country, its citizens and society. Thus, the need for effective leadership in the construction industry is critical. Effective leadership is arguably one of the primary answers to the challenges confronting the construction industry, including (and especially) the problems of operating in developing countries. To this end, greater attention should be given to effective leadership and leadership development in the construction industry, in developing countries, such as South Africa (Ofori & Shamas-ur-Rehman, 2012). Many organisations in South Africa face challenges as a result of uncertainty, fast-changing environments, globalisation, and increasingly complex work tasks. In order to adapt to these challenges, a change in leadership style may be needed. Traditionally, leadership has been seen as a top-down influence. For a number of decades, this vertical leadership model has been the principal prototype in the leadership field; but lately, shared and balanced leadership have increased importance, particularly in the project management literature (Kim &Yoon, 2015; Pretorius *et al.*, 2018). The need for organisations to respond to the fast changing and often diverging expectations from clients, and to remain competitive in the current harsh economic environment has resulted in an unremitting search for improving performance. Due to its inspiring and motivating characteristics transformational leadership style is considered very applicable to improve organisational performance in uncertain and changing environments and to achieve competitive advantage (Nemanich & Keller, 2007; Ömer Faruk İşcan *et al.*, 2014; Simmons *et al*., 2020). In addition, 21st century leaders have to be critical and creative thinkers as they are essentially reinventing the concept of leadership in a diverse performance setting. Most of what has been learned about leadership in the past was based on hierarchic and bureaucratic structures, which can no longer resolve the current workforce challenges.

Transformational leaders are believed to have the capability to support their employees by responding to stressful circumstances with openness, support, and compassion (Limsila & Ogunlana, 2008; Marques, 2015). The transformational leadership style is useful in the current landscape because it empowers leaders to successfully cope with the only constant in contemporary performance, organisational change, while adhering to a three-tier focus: understanding the need for change; creating a vision that enables the change; and implementing the change (Marques, 2015; Corley, 2020; Simmons *et al*., 2020).

3.5 SUMMARY OF THE CHAPTER

This chapter provided an outline of the extant literature on leadership, the role of leadership, transformational leadership, and diversity in leadership as it relates to this study's research aims and objectives. The literature presented in this chapter examined the historic research on leadership and its link to diversity. The gaps and challenges associated with the current research and literature on South African construction industry leadership capabilities were presented in this chapter. The following chapter will provide an overview of the extant literature on innovation as it pertains to this study.

CHAPTER FOUR:
LITERATURE REVIEW: INNOVATION

4.1 INTRODUCTION

Innovation through creativity is a crucial factor in the success and competitive advantage of organisations and for a strong economy. Today, all organisations face a dynamic environment characterised by rapid technological change, shortening product life cycles, and globalisation. Organisations need to be more creative and innovative than before to survive and advance performance and growth. This chapter will review the broad literature on the concept of innovation and innovation research as it pertains to the research aim and objectives of this study and outline the gaps in the literature as it relates innovation in the construction study and to this study.

4.2 DEFINING INNOVATION IN THE CONTEXT OF THIS STUDY

Innovation is the process of introducing something new for the purpose of making changes to something established. As such, innovation can be radical or incremental, and can be applied to products, processes, or services and in any organisation. It can occur at all levels in an organisation, from management teams to departments, and even to the level of the individual (O'Sullivan & Dooley, 2009). Innovation is one of the most important and most complex issues confronting organisations in the 21st century and is one of the key success factors for organisations (Tohidi & Jabbari, 2012).

4.2.1 Innovation in Design

The term design in the context of innovation is defined as the mindful decision-making process by which information or an idea is converted into an outcome, be it a tangible (product) or an intangible (service) (O'Sullivan & Dooley, 2009). The design activity draws heavily on creativity to resolve issues such as the aesthetics, form, and functionality of the eventual outcome. In this way, during the exploitation phase of the innovation process, organisations engage in design activities that will produce an output that provides the optimum fit with market requirements. Although design is an integral part of the exploitation phase of an innovation, it is only one aspect. Exploitation can include other elements, such as process development and market preparation (O'Sullivan & Dooley, 2009; Verganti *et al.*, 2020).

4.2.2 Innovation as a tool for problem-solving in the industry

Problem-solving abilities have been proven to be one of the key factors for success in organisations and personal careers. Through decades of research data, organisations have studied factors that affect organisational improvement. In a volatile and sophisticated knowledge-based, technical and complex industry, such as the construction industry, these factors are important to drive innovation and sustainable growth and development. The ability to proactively solve problems has been recognised as a key element of innovative behaviour in responding to rapid changes by finding various alternatives and predicting outcomes from these alternatives to maximise positive results, minimise negative consequences, and select inclusive solutions to the problems. Therefore, this ability influences innovative behaviour, as an innovation act starts with recognition of a problem, adoption of a new idea, or creation of a solution (Kim *et al*., 2018; Duggins, 2019).

Table 4.1: The definition of problem-solving

THE DEFINITION OF PROBLEM-SOLVING	
Publication	**Definition**
Spivak *et al*. (1976)	The ability to discover and create technologies and methods that can maximise new and diverse problems in everyday interpersonal relationships
D'zurilla & Nezu (1990)	A cognitive, emotional, and behavioural process that attempts to find the best effective response when an individual has a specific problem in their daily lives
Stevenson & Jarrilo (1990)	Basic entrepreneurial skill
Warner (2002)	The ability to create the best solutions to problems while working.
Shane (2003)	The ability to identify opportunities with new information, such as challenges.

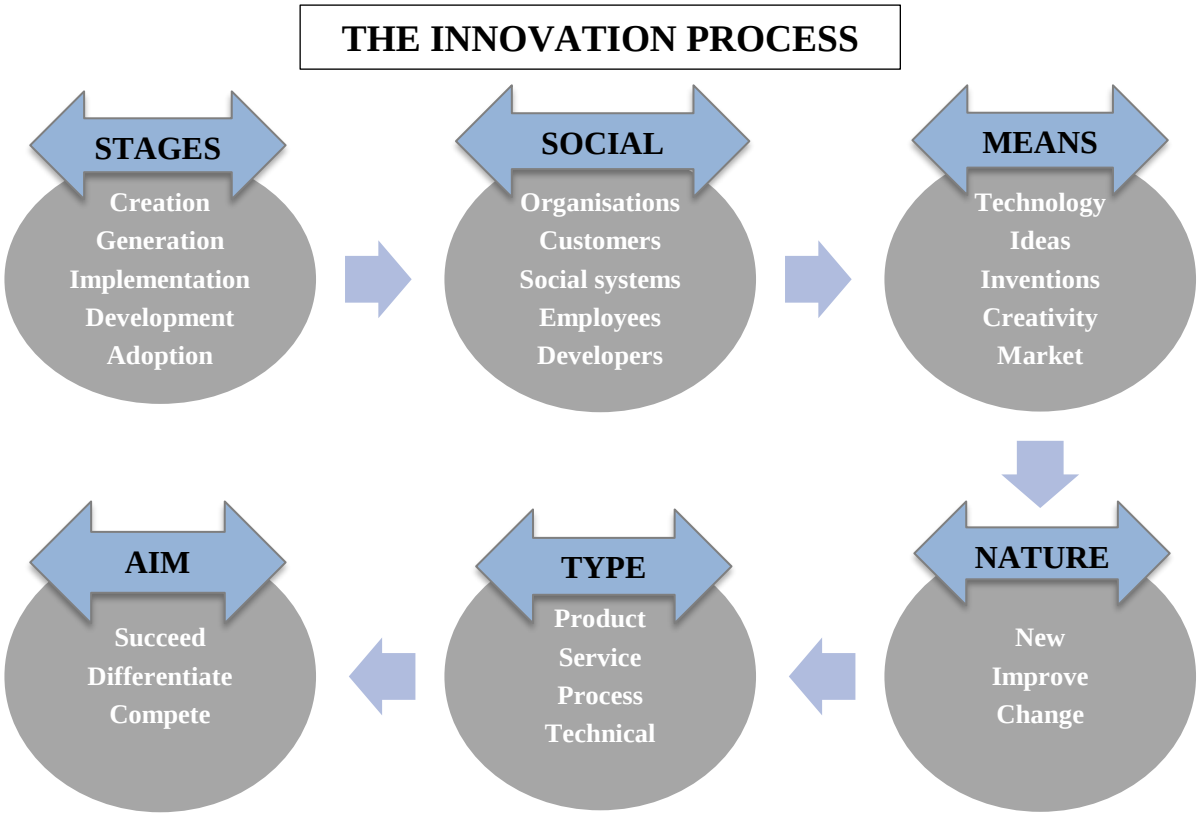
Source: Kim et al. (2018)

4.3 INNOVATION RESEARCH

According to Siguaw *et al,* (2006), a review of the extensive innovation literature over the last 35 years indicates that prior research falls primarily into the following categories, namely: economics of research and development (R&D); effects of market orientation on product and process innovation; practitioner- oriented essays promoting the normative how-to approach or the general value of innovation; the innovation adoption process; the development of typologies based on innovativeness; and descriptive studies, generally anecdotal, of firm characteristics that serve to generate innovation.

Baregheh *et al.* (2009) suggest that even though there is some overlap between the various definitions of innovation, overall, the numerous and diverse definitions create a situation in which there is no clear and authoritative definition of innovation. In their study to define innovation Baregheh *et al.* (2009) concluded that innovation is best defined through a model that presents the essence of innovation, regardless of the organisational or disciplinary context. The model is comprised of six components that describe the possible flow of the innovation process and indicate multiple diverse starting points within the innovation process. These might be influenced by disciplinary background. For example, engineers might begin with a focus on the technical possibilities of a new product, whereas marketing specialists might concentrate on identifying potential new markets.

Individuals within organisations may choose different starting points on the journey to innovation. The chosen starting point might also have a strong relationship to the way innovation is achieved, or not. Figure 4.1 depicts their diagrammatic definition of innovation.



Source: Baregheh et al. (2009)

Figure 4.1: Diagrammatic definition of innovation: The process of Innovation

Creativity and innovation drive progress and allow organisations to maintain competitive advantage. In recent years, both industry and academia have placed a premium upon creativity and innovation, and research in the field has flourished, generating several compelling findings Unfortunately, the research has been fragmentary in nature resulting in leadership, creativity, and innovation literature that is fragmented and primarily populated by small, 'exploratory studies', disconnected from any unifying framework (Hughes *et al.,* 2018; Nakano & Wechsler, 2018).

In addition, the rapid growth of research in this field seems to have reduced due to several essential concerns, such as the measurement of key constructs, for example, creativity and innovation, and the use of study designs that are suitable to address the fascinating and challenging research questions posed (Hughes *et al.,* 2018).

4.3.1 Innovation and Creativity

Although creativity was initially conceived of as a function of innate personality traits the notion that creativity is a social process has increasingly gained prominence. In contrast to the lone genius view, theorists suggest that interactions with others influence various aspects of the creative process. This perspective is consistent with accounts from notable and historic creative organisations. For example, accounts of Bell Labs describe how the culture and physical space influenced collaboration and interaction with other scientists (Smith & Mannucci, 2017).

Smith and Mannucci (2017) further state that, accordingly, some studies suggest that bringing people together is critical for innovative activities. Creativity scholars have highlighted that after an idea is generated, it requires further development and validation checks. Moreover, innovation scholars have supported the importance of championing activities prior to the successful implementation of an idea.

Agbor (2008) argues that while culture, strategy, technology, and other management tools are important in generating effectiveness in the 21st century, creativity and innovation are what drive organisational success in many industries. However, for creativity to take place, leaders must actively implement strategies that encourage it. Therefore, leadership is the catalyst and source of organisational creativity and innovation. In essence, for organisations to be able to achieve constant innovation, leaders must establish an environment conducive to renewal and build organisational culture that encourages creativity and innovation.

Organisational creativity also depends on how leaders encourage and manage diversity in the organisation, as well as develop an effective leadership structure that sustains the innovation process (Agbor, 2008).

4.3.1.1 The relationship between innovation, creativity and problem-solving

In general, innovation is differentiated from creativity by its emphasis on the implementation of creative ideas in an economic setting (Amabile & Pratt, 2016). The degree of creativity determines whether information is changed into knowledge, upon which action is based and innovation can occur (Johannessen *et al.*, 1999). The progress of humanity has been increasingly dependent on innovation and invention. From this point of view, creativity is perceived not only as the expression of human potential but is also understood as essential for societal growth. Considering that innovation depends on creativity applied to a specific domain, there is a need to understand these phenomena, and to determine if they are independent, related or complementary. Interest in the study of creativity can be explained by the need to further understand human potential and characteristics relative to their ability to problem solve (Nakano & Wechsler, 2018). In this study, the construct of innovation is looked at through the lens of its relationship with creativity and problem-solving to advance organisational performance in the South African construction industry.

4.4 THE IMPACT OF INNOVATION ON ORGANISATIONAL PERFORMANCE

Understanding the relationship between innovation and organisational performance in both small and large organisations is appropriate for 21st century researchers, the decision makers, policy makers and leaders of small and large organisations. The subject of understanding this relationship has become more important in recent years and the rationale is to encourage organisations to conduct innovation that will lead to successful organisational performance and better economic performance (Suhag *et al.*, 2017). In the dynamic and evolving 21st century environment, it is essential that organisational goals focus on innovation in accordance with the changing needs of consumers. According to resource-advantage theory, innovation enables organisations to offer more value to clients than their competitors and is primary to business success. There have been several studies linked with the resource-advantage impact of innovation management capability. These studies have shown that technology-related innovation alone is not enough to maintain sustainable competitive advantage. To maintain

such an advantage, business units must also consider innovation in non-technological areas. Organisations that systematically manage innovation show more advancement in innovation capability than others (Izadi *et al*., 2020). There is a relationship between diversity and innovation in design intensive industries such as the construction industry because innovativeness does not depend on the diversity brought by an individual designer, but on the diversity brought by the entire portfolio of designers in an organisation (the workforce). The capability to build valuable creative networks over time is a critical asset in design-intensive industries as the knowledge developed through specific collaborations can be exploited in other projects, even in collaboration with other designers. This cumulative asset can also be used to enter new markets and improve an organisation's business model, making it more competitive (Dell'Era & Verganti, 2010).

The measure of innovation at the organisational level relates to individuals, team-level assessments, and the smallest to the largest organisations. Measurement of innovation for organisations can be done by surveys, workshops, consultants, or internal benchmarking. There is no determined general way to measure organisational innovation. Corporate measurements are generally structured around specific key performance indicators (KPI's) which comprise several aspects of innovation such as organisational measures related to finances, innovation process efficiency, employees' contribution and motivation, as well as benefits for customers. Measured values will vary between organisations, covering. for example, new product revenue, spending in R&D, time to market, customer and employee perception & satisfaction, number of patents, additional sales resulting from past innovations (Davila *et al*., 2006)

4.5 THE IMPACT OF INNOVATION ON SOCIETY

Innovation benefits large societies, nations and regions. The benefits of innovation go beyond producing new products and services that enrich the lives of individuals, as innovation has the potential to significantly enhance economic growth. Process innovation also increases the amount of economic growth by providing cost competitiveness within a nation and attracting investment by organisations that establish bases there. The innovation and manufacturing abilities of organisations and the sale of the resulting innovative products on the global market, play an important role in developing national economies (O'Sullivan & Dooley, 2009). These activities not only bring increased revenue streams into the economy, increasing the gross domestic product, but also provide employment opportunities (O'Sullivan & Dooley, 2009). On the other hand, innovation can have unintended negative consequences for a society, such

as eradicating traditional industries. Many national governments have established agencies to promote and foster a more innovative culture to increase wealth and reduce costs for the nation. In this respect, performance indicators such as gross national product, export sales, direct foreign investment, research and development expenditure, employment levels, and new business start-ups suggest the innovative potential of a large society. Innovation is essential for sustainable growth and economic development. Several core conditions enable innovation and encourage economic growth. In the 21st century economy, innovation is crucial for value creation, growth and employment and innovation processes take place at the organisational, regional, and national level. Innovation will lead to new businesses as well as to the increased competitiveness of existing organisations (Gerguri & Ramadani, 2010). Major global challenges such as climate change, socio-economic inequalities, ageing populations, and inadequate infrastructure such as lack of social housing, water, electricity, high unemployment, and skills shortage, in the case of South Africa, are impacting societies worldwide. Social entrepreneurs take it upon themselves to develop innovative solutions for such societal challenges (Lubberink *et al.*, 2018).

4.5.1 Social Innovation and Responsible Innovation

Social value can be understood as the value for society that is generated by solving a societal problem or responding to pressing social needs. The social innovation outcomes can manifest as products, production processes, technologies, services, interventions, business models or a combination of all of these, thereby differing in the extent of formalisation. However, the innovative solution may also induce or require social change processes, especially in cases where social entrepreneurs need to challenge the social systems that created the problems they address. Responsible innovation is a new and emerging concept developed by researchers and policymakers with the aim of stimulating anticipatory governance of innovation based on deliberative forms of stakeholder engagement. It considers the development of innovations as a political process as the implications of the innovation may have a profound impact on the public. The development of responsible innovations is therefore only considered as responsible when the innovation process is based on public participation and deliberation which is not necessarily the case in social innovation or social entrepreneurship (Lubberink *et al.*, 2018).

4.6 FACILITATING INNOVATION IN ORGANISATIONS

Innovation in organisations is achieved in many ways, depending on the organisation's strategic goals. The most common is through research and development (R&D). R&D helps stimulate innovations that lead to productive growth in industries such as medicine, engineering, information technology and construction. Nevertheless, innovations can be developed by less formal on-the-job adjustments of practice, through the exchange and combination of various professional experiences and via other routes, such as collaboration (Dubickis & Gaile-Sarkane, 2015).

A study conducted by Barsh *et al*. (2008) found that while senior executives mention innovation as an important driver of growth, few of them explicitly lead and manage it. About one-third say that they manage innovation on an ad hoc basis when needed. Another third manage innovation as part of the senior-leadership team's agenda. According to 19% of the senior executives, neither growth nor innovation is part of the strategic-planning process. Just under half indicated that innovation is integrated into the strategic development informally. Only 27% said that innovation is fully integrated into it.

Innovation procedures describe the actions that are performed at each stage of the development of an innovation. Innovation management is the governance and administration of these innovation processes. R&D management can be considered a wider term than innovation management since it encompasses invention processes as well as innovation processes. However, because R&D management generally focuses on a specific approach to innovation management, innovation management may be deemed the broader of the two terms. Innovation management generations are considered historical bundles of best practices in innovation management. The historical advancement of innovation management is evolutionary in nature, where organisations adapt innovation management to the changing societal and business conditions to overcome the disadvantages of preceding innovation management principles. The aspiration to overcome these disadvantages and the need to adapt to a changing environment are interrelated (Adams *et al*., 2006; Ortt & Duin, 2008; Dodgson *et al*., 2013; Espinosa-Cristia, 2019).

4.7 SUMMARY OF THE CHAPTER

This chapter provided an outline of the extant literature on innovation, the impact of innovation on organisational performance and society, and transformational leadership as it relates to this study's research aims and objectives. The literature presented in this chapter examined historic creativity and innovation, further outlining literature on social innovation. This chapter also provided an overview of the literature that defines the innovation in the context of this study as will be outlined further in the conceptual framework in the following chapter on the theoretical and conceptual framework for this study.

CHAPTER FIVE:
THE THEORETICAL AND CONCEPTUAL FRAMEWORK

5.1 INTRODUCTION

This research aims to contribute to the South African Construction industry literature and body of knowledge of leadership, diversity management and innovation in relation to providing inclusive solutions to societal infrastructure challenges by providing a theoretical framework for the management of workforce diversity and its impact on creative problem-solving and innovation. The theoretical framework of this study is the structure that summarises the concepts and theories, developed from previously tested and published knowledge, synthesised to provide a theoretical background based on the literature reviewed. This chapter draws together the issues identified in the literature review chapters 2 to 4 and reviews the major theories that underpin this research study, which informs the conceptual framework of this study:

1. Diversity and Diversity management theory,
2. Workforce diversity theory,
3. Workforce diversity management theory,
4. Leadership theory,
5. Innovation and Innovation Management theory,
6. The relationship between leadership and successful organisational innovation theory, and
7. The relationship between leadership, diversity management and innovation theory.

5.2 DIVERSITY AND DIVERSITY MANAGEMENT THEORY

5.2.1 Diversity Theory

Theories on diversity and diversity management within the field of organisation studies started to develop in the 1980s. These theories were influenced by managerial reports that drew attention to increasing the diversity of the future workforce. Studies have examined the relationship between value diversity and conflict, or between cognitive heterogeneity and problem-solving capabilities (Janssens & Steyaert, 2003).

Performance-based studies focus on profit as a central goal for conducting diversity research. On the other hand, non-performance-based studies rely on interpretivist arguments to explore positive or adverse experiences of disadvantageous groups in a diverse environment. This focal

point brings the categorisation of a business case for diversity as a utilitarian argument and an ethical case for diversity as a deontological argument (Aydin & Rahman, 2017).

5.2.2 Diversity Management Theory

The theory asserts that by managing diversity many advantages can be achieved by the organisation, notably lower costs, low labour turnover rate, greater creativity, increased productivity, and staff satisfaction (Atyah, 2016; Aydin & Rahman, 2017). Brewer *et al.* (2002) and Chin (2016) suggest that theorists attempting to understand the mutually reinforcing impacts of race, gender, caste and class face the challenge of contending with the deep intersectionality of these social forces. Western analytic categories of gender, race, and class must be interrogated on whether they can travel internationally in articulating the position of women and the previously disadvantaged cross-culturally, and do scholars understand that treating these categories separately, rather than as deeply related, is untenable theory and practice. Prasad *et al.* (2006) supports this argument, as they have questioned the relevance of the Anglo-Saxon understanding of diversity management and its applicability in countries that are multicultural, such as South Africa. They suggest that research should seek to find the most effective way to manage diversity locally instead of relying on the methods and approaches that are already in use globally. The current methods and approaches may not always be the best way to manage diversity because of shifting cultural identities.

According to Bairoh (2008) there are two general approaches and three specific types of approaches to managing diversity. The two general approaches are the Institutional Theory of Diversity Management and the Resource Based Theory of Diversity Management. Bairoh (2008) further identified these three specific approaches as the practitioner/consultant approach, the mainstream approach, and critical approaches. Each of these types of approaches explains how the incorporation of diversity can help organisations develop effective strategies to reach organisational goals, such as financial performance, employee engagement and retention, customer satisfaction and successful project delivery.

In their review of the extant research on diversity management practices, Yang and Konrad (2011) found that the research in this area has focused exclusively on practices related to employees. In defining their concept of diversity management practices, they deliberately included the practices organisations have put in place to manage diversity among all stakeholder groups.

Management practices for connecting with a diverse set of customers, suppliers, regulators, board directors, and community members are likely to be important for fulfilling the social and normative obligations emphasised by institutional theory. These connections are also likely to generate learning and innovations and have the potential to serve as rare and inimitable resources generating competitive advantage in resource-based theory. Organisational researchers can advance knowledge by extending measurement of diversity management practices beyond human resources management to reach across multiple organisational functions (Yang & Konrad, 2011; Chin, 2016).

5.2.3 A Holistic Diversity and Diversity Management Examination

When observed holistically, human diversity is extensive, and its study bridges both the grey and refereed literature. This is because its landscape is systemic, cultural and institutional and touches every facet of society. For an organisation to be successful in this area, it needs to define the structure in which diversity exists, the specific context that diversity is being applied in, and the different stages of the process of implementing diversity. A critical part of implementing diversity is the creation of inclusive workplaces that embrace and effectively manage differences. Implementation of diversity is a progression that requires change and innovation. Transformational leaders who are adaptive, flexible and able to build collaborative solutions, share leadership responsibility and engender trust are required. This can be at odds with prevailing leadership and management styles, which are often structured around tactically based expertise and control decision-making (Akobo & Damisah, 2018; Young *et al*., 2018; Kelan & Wratil, 2018; Corley, 2020; Koellen, 2021).

The increasing assertion that valuing differences makes business sense and gives great momentum to the managing diversity concept. On the other hand, some literature asserts that most organisations are inefficient in managing workforce diversity (Seymen, 2006). Inegbedion *et al*. (2020) proposed a model for diversity management and organisational efficiency. The model suggested that employee perceptions of marginalisation and cultural diversity results in organisational conflict. If the organisation does not manage diversity; organisational conflict leads to inefficiency. However, if there is diversity management, attention will be given to the management of employees' perception of marginalisation, cultural diversity, and conflict. Moreover, diversity management improves organisational efficiency (Inegbedion *et al*., 2020). Table 5.1 is a comparison of organisational strategies about management of diversity.

Table 5.1: The comparison of organisational strategies about management of diversity

Types of organisations	Perceived impact of diversity in organisations	Strategy for managing the impact of diversity	Most likely outcome of strategy	Frequency of perception and strategy
Parochial: our way is the only way.	No impact: Diversity has no recognised impact on the organisation.	Ignorance to differences: Ignore the impact of diversity on the organisation	Problems: Problems will occur, but they will not be attributed to diversity	Very common
Ethnocentric: Our way is the best way	Negative effect: Diversity will cause problems for the organisation.	Minimising differences: Minimise the sources and the impact of cultural diversity on the organisation. If possible, select a homogeneous workforce.	Some problems and a few advantages: Problems will be reduced as diversity is decreased while the possibility of creating advantages will be eliminated; problems will be attributed to diversity	Common
Synergistic: The combination of our way and their way may be the best way	Potentially positive and negative effects: Diversity can simultaneously lead to problems and advantages for the organisation	Manage differences: Train organisational members to recognise differences and use them to create advantages for the organisation.	Some problems and many advantages: Advantages to the organisation will be realised and recognised; some problems will continue to occur and will need to be managed	Very uncommon

Source: Seymen (2006)

5.3 WORKFORCE DIVERSITY THEORY

A growing body of research has linked productive organisational processes and outcomes, such as group performance, creativity and problem-solving, with a diverse workforce (Ansari *et al*., 2016). Workforce diversity is a topic that has been researched extensively in the humanities fraternity, particularly in relation to human resources (Capitman, 2002; Chin, 2010; Chin *et al*., 2016). Numerous studies have focused on improving the diversity in organisations, both in industry and in academia. Every day there are more headlines about the challenges of workforce diversity. A focus on diversity often means a focus on hiring, and even with substantial investments of time and money, it takes years to turn the tide for companies with thousands of employees. According to Atyah (2016) and Aydin and Rahman (2017), one of the common global phenomena in large companies is the diversity of workforce, which is being characterised by individuals with various characteristics like age, gender, nationality, religion, tribal affiliations, logical, doctrinal, or political affiliation.

The phenomenon of workforce diversity is included in the Business Management's Dictionary as "workforce diversity" and has developed into a subject area that is covered in numerous books and research articles. It has also become the primary interest in seminars and conferences (Atyah, 2016). Stewart (2010) argues that the primary key for researchers is to address the problem of the critical importance of diversity in organisations.

5.4 WORKFORCE DIVERSITY MANAGEMENT THEORY

Prasad *et al.* (2006) argue that too much of the literature focusing on managing diversity ignores the real problems created by inequality and discrimination, and the effects that these concepts have on organisational outcomes and, instead, focus too much on training and workshops to teach how diversity should be managed. According to Lorbiecki and Jack's (2000) critical discourse analysis, they examined how managers and other policy makers within organisations defined and viewed the term diversity. They found that managers see diversity as something that should be managed. Lorbiecki and Jack (2000) believe that because groups are identified and viewed as different, they need to be managed as this helps to erase the differences found between diverse individuals. Litvin (1997) claims that because individuals are seen as being diverse within an organisation, co-workers are forced to view them in a certain light. Furthermore, because mainstream approaches to diversity place individuals into socially constructed demographic categories that are portrayed as obvious, natural, and undisputable, they make it almost impossible for change to occur.

Lorbiecki and Jack (2000) agree with Litvin (1997) that because traditional approaches to diversity management assign differences to individuals, there will be no movement within or between diverse groups. Several major contributions to the workplace diversity field have been based on inductive research methodologies (Cox, 1993; Eli & Thomas, 2001; French, 2001; Yang & Konrad, 2011). Scholars are beginning to build theories regarding the impact of diversity on workplace outcomes (van Knippenberg *et al.*, 2004; Yang & Konrad, 2011), and diversity management has been posited as a moderator of the relationship between diversity in the workplace and outcomes such as working relationships and performance (Kochan *et al.*, 2003).

5.5 LEADERSHIP THEORY

Leadership theories need to be inclusive and incorporate explanations of how dimensions of diversity shape the understanding of leadership. Yet leadership theories have not addressed

how the diversity of leaders and followers within organisations influences how leadership executes its role (Kellerman & Webster, 2001; Covey, 2006; Drucker, 2006; Bass & Bass, 2009; Avolio *et al*., 2009; Lipman-Blumen, 2010; Kabasakal *et al*., 2012; Kellerman, 2013; Maccoby, 2015). Theories of leadership have neglected diversity issues. As the population within the world becomes increasingly diverse, the contexts in which leadership occurs within institutions and communities will also become increasingly diverse. Attention to diversity is not simply about representation of leaders from diverse groups in the ranks of leadership. Attention to diversity means paradigm shifts in our theories of leadership to make them inclusive; it means incorporating explanations of how dimensions of diversity shape our understanding of leadership. It means paying attention to the perceptions and expectations of diverse leaders by diverse followers and to how bias influences the exercise of leadership (Eagly & Chin, 2010). Although leadership theories have evolved and reflect changing social contexts, they remain silent on issues of equity, diversity, and social justice. Theories of leadership need to be expanded to incorporate diversity if they are to be relevant for the 21st century amidst new social contexts, emerging global concerns, and changing population demographics (Eagly & Chin, 2010; Coleman, 2012; Chin & Trimble, 2014).

Khan *et al*. (2016) point to the existence of countless explanations, classifications, theories, and definitions of leadership in contemporary literature. Considerable effort has gone into classifying and shedding light on varied dimensions of active leadership. This, in turn has generated significant organisational and social research studies of leadership styles and behaviours. Researchers (Winston & Patterson, 2006; Kabasakal *et al*., 2012; Kellerman, 2013; Maccoby, 2015; Steinmann *et al.*, 2018) and practitioners agree there has been a progression in thinking over time that has ultimately resulted in an understanding of leadership as a flexible developmental process with each new piece of research building on, and rarely dismissing entirely, that which was derived before it. Main theories that emerged during 20th century include: the Great Man theory, Trait theory, Participative theory, Situational theory, Style and Behavioural theory, Transactional, Contingency theory and Transformational theory (Khan *et al*., 2016; Steinmann *et al.*, 2018).Table 5.2 depicts these and their key characteristics.

Table 5.2: Leadership theories and Key Characteristics

Leadership Theories			
Theory	**Key Characteristics**	**Pros**	**Cons**
Great Man theory	This leadership theory suggests that some people are born to lead. At their core, great man theories operate on the belief that leadership skills are a function of heredity. Experience is not factored into the equation.	Inspirational	Outdated: Current thinking suggests this is an outdated theory because it's usually tied to gender roles.
Trait theory	Similar in nature to the great man theory, trait theories operate under the belief that effective leaders are born with specific characteristics.	Explains some leadership traits	Unable to differentiate from non-leaders
Participative leadership theory	Participative leadership encourages the input of followers. Often employed in environments where creativity is required, this approach actively solicits idea sharing and is solution focused. In this dynamic, the leader still holds the power and is the final decision maker.	Consensus focused	Prone to group think
Situational theory	This is an adaptable approach to leadership because it contains both directive and supportive dimensions. Application largely depends upon the follower dynamics. If the leader is considered to be the most experienced and knowledgeable on a given topic, an authoritarian style is employed. Where followers are considered to be more skilled, a democratic style is used.	Multi-factorial	May lean too hard on authoritarian
Style and Behavioural theory	Completely opposite to the great man theories are the behavioural theories. Under this dynamic, the belief is that leaders are made and not born. Behavioural theories proffer that a person can learn to be a great leader through coaching, teaching, and observation.	Promotes learning and observation	Won't work if person isn't motivated
Transactional leadership theory	This approach to leadership, also known as management theories of leadership, focuses on workplace issues. Specifically, supervision, organisation and group performance.	Directive with clear-cut expectations	Followers may not like directive approach
Contingency leadership theory.	The contingency model suggests that environmental factors are key to leadership effectiveness. As the situation changes, the requirements of the leader also must change.	Adaptable	Not all leaders can adapt
Transformational Leadership Theory	This approach is also known as relationship theories of leadership. Almost exclusively, the emphasis is placed on the connections between followers and leaders. Transformational leader styles are concerned with the greater good and encourage the need to belong.	Motivational and inspirational	Can be used for destructive purposes

Adapted from: Khan et al. (2016) and Steinmann et al. (2018)

To formulate the leadership basis of the conceptual framework for this study, the transformational leadership theory and its attributes have been assumed. The reasoning being that the transformational leadership style provides a magnetic quality that makes followers want to follow a leader and buy into their vision of the future. Transformational leadership encourages followers to be creative and innovative while challenging beliefs. As a result, followers often think of themselves as agents of change (Hughes *et al.*, 2008; Khan *et al*., 2016; Steinman *et al*., 2018).

5.5.1 Transformational Leadership Theory

Transformational leadership differentiates itself from the rest of the preceding and contemporary theories based on its alignment to a greater good as it requires involvement of the followers in processes or activities related to personal factor towards the organisation and a course that will yield certain superior social dividends. Transformational leaders raise the motivation and morality of both the follower and the leader. It is considered that transformational leaders engage in interactions with followers based on common values, beliefs and goals. This impacts the performance leading to the attainment of goal. The transformational leader attempts to encourage followers to reorder their needs by transcending self-interests and striving for higher order needs. Transformational leadership is a course that changes, and approaches targets on beliefs, values and attitudes that enlighten leaders' practices and the capacity to lead change (Khan *et al.*, 2016; Korejan & Shabhazi, 2016; Steinmann *et al.*, 2018).

The literature suggests that in transformational leadership, followers and leaders set aside personal interests for the benefit of the group. The leader is then asked to focus on the needs and input of the followers to transform everyone into a leader by empowering and motivating them. Transformational leaders are further differentiated by their ethics. Transformational leaders are assessed according to their ability to identify the need for change, gain the agreement and commitment of others, create a vision that guides change and embed the change. Such leaders treat subordinates individually and provide significance and challenge to their work in an effort to develop employees' skills, morals and consciousness. These leaders present a convincing and encouraging vision of the future. They are visionary leaders who seek to appeal to their followers' better nature and move them toward higher and more universal needs and purposes (Dvir *et al*., 2002; Stone *et al.*, 2004; Gumusluoglu & Ilsev, 2009; Khan *et al*., 2016; Steinman *et al*., 2018).

According to Khan *et al*. (2016), advocates of transformational leadership are confident that the blueprints of the past should not be the map for the future. They maintain that successful transformational leaders create clear and compelling visions for the future. Transformational leaders channel their energy towards casting vision, setting long-term goals, implementing change and alignment, and developing and training others.

5.6 INNOVATION AND INNOVATION MANAGEMENT THEORY

5.6.1 Innovation Theory

Innovation theory is not entrenched in a single discipline or school of thought. Rather, conceptual components are drawn from a range of academic disciplines and research areas. Beginning in the 1930s, early theoretical assessments viewed the innovation process as a reasonably simple, one-directional journey from elementary research to applied research to technology development and distribution. This linear model suggests that developments in science determine the rate and direction of innovation and that the best way to increase the output of new technologies is to increase the input of new inventions by putting more resources into R&D. This is the process of technology-push. A different perspective, namely, demand-pull, gained traction in the 1950s, arguing that demand for products and services is more important in inspiring inventive activity than improvements in the state of knowledge. Both the technology-push and demand-pull perspectives have since been challenged as over-simplistic, and more recent theoretical approaches recognise the importance of both (Sundbo, 1998; Mytelka & Smith, 2002; Greenacre *et al.*, 2012).

One of the most noteworthy outcomes of the progression in innovation theory has been the recognition that innovation should not simply be adopted via technological R&D, but also implies a role for policy to enhance the institutional framework and the opportunities for connections to better incentivise innovation. However, the lack of a unified theory that relates innovation to growth and dissemination and links macro approaches to the micro level has reduced the application of innovation theory to policy areas beyond the limitations of education or research and technology development policy (Mytelka & Smith, 2002; Chaminade & Edquist, 2006). Existing perspectives on the general innovation arena show some similarities. All are an effort to create an integrated, systems-based concept of innovation for understanding the structures and processes that support it in a comprehensive manner (Damanpour, 2020; Mallinson, 2021).

5.6.2 Innovation Management Theory

The body of literature about the topic of innovation management is relatively young. Innovation research is therefore constantly moving from theory to practice and back to theory (Eveleens, 2010). The evolution of theories of innovation management can be explained by the increasing importance of social requirements in the explanation of innovation, which was originally based only on tangible forms of capital. The earlier ideas are that innovation is determined by research and by unordered interaction between organisations and other players. The latest insight is that knowledge has a more crucial role in cultivating innovation. The growing importance of knowledge as a creation factor and as a basis of innovation can be explained by the continuous accumulation of technical knowledge over time. The use of communications technologies has made that knowledge available rapidly on a worldwide scale (Hidalgo & Albors, 2008).

Strategically, innovation management is driven in two different ways, internally and externally. Internally, innovation is driven by senior management attitudes, marketing, information technology departments and the organisation's employees. Collaborative efforts support and enable the innovation management process. Externally, innovation management is driven by different knowledge-intensive organisations that build knowledge as their primary value-adding process. These are organisations where employees with a high degree of knowledge are essential to the primary service of the organisation. They usually have little financial capital but have the knowledge and competence of their workforce as their main assets (Eveleens, 2010; Greenacre *et al.*, 2012; Bouwer, 2017; Mallinson, 2021). Table 5.3 depicts the evolution of innovation management theory over the past decades.

Table 5.3: Evolution of Innovation Management Research Theory

Decades	Innovation Management Research Theory
1970s	Corporate R&D units as sources of innovation **pushed technology** to the market
1980s	Marketing departments instigated demand through promotion campaigns to generate **market pull**
1990s	Balanced push-pull **innovation systems** that integrated and aligned both efforts.
2000s	Scholars started to investigate **innovation ecosystems** that contain self-driven corporate innovation systems and interactions with its surround environment.
2010s	Strong influence from digital transformation and digital platforms that will further integrate current innovation management theory into **open digital innovation ecosystems**

Source: Bouwer (2017)

5.7 THE RELATIONSHIP BETWEEN LEADERSHIP AND ORGANISATIONAL INNOVATION THEORY

According to Hughes *et al*. (2018), leadership is a key promoter of employee, team, and organisational creativity and innovation. Research in this area holds great promise for the development of intriguing theory and impactful policy implications, but only if studies are conducted rigorously. In their 2018 review of the research conducted on leadership, creativity, and innovation, Hughes *et al.* (2018) found that creativity and innovation are vital for organisational success and are intriguing topics to research. Furthermore, they identified leadership as a major contextual factor that influences employee creativity and innovation. Their findings also revealed that research in this area is growing, with 85% of the studies included in their review having been published in the last 10 years. They conclude that although the growth of leadership-creativity/innovation research has been swift and exploratory, individual studies have not been building systematically toward a unified body of evidence. The effects of leadership styles on organisational innovativeness are still arguable due to inconsistencies.

Researchers (Barsh *et al*., 2009; Oke *et al*., 2009; Bel, 2010; Denti & Hemlin, 2012; Sethibe & Steyn, 2015) have analysed the direct and indirect relationships with antecedent variables of organisational innovativeness. It has been confirmed that transformational leadership styles exert an influence on organisational innovativeness. However, organisations sometimes fail to achieve organisational innovativeness due to their limited understanding of the relationships between leadership and knowledge-based empowering interaction, which will enhance organisational innovativeness (Kho *et al*., 2020).

In their systematic review of the state of research on the relationship between leadership style, innovation, and organisational performance, Sethibe and Steyn (2015) found that, there is no shortage of documented studies in the literature that investigate the relationship between leadership and innovation. The consensus among scholars is that the transformational leadership style is significantly and positively related to organisational creativity and innovation. However, despite this empirical evidence showing the link between leadership style and innovation on the one hand and innovation and financial performance on the other, very few studies have been designed to trace systematically the path of the effect of innovation on organisational (financial) performance by examining the influence of leadership style.

Sethibe and Steyn (2015) identified fewer than ten peer-reviewed scholarly articles that investigate the relationship between leadership styles, innovation, and organisational performance these are depicted in Table 5.4

Table 5.4: Articles that investigate transformational leadership styles, innovation, and organisational performance

#	Year	Author(s)	Title	Journal
1	1993	Howell & Avolio	Transformational leadership, transactional leadership, locus of control and support for innovation: key predictors of consolidated-business-unit performance.	Journal of Applied Psychology
2	2008	García-Morales, Lloréns-Montes & Verdú-Jover	The effects of transformational leadership on organisational performance through knowledge and innovation	British Journal of Management
3	2008	García-Morales, Matías-Reche & Hurtado-Torres	Influence of transformational leadership on organisational innovation and performance depending on the level of organisational learning in the pharmaceutical sector	Journal of Organisational Change Management
4	2008	Matzler, Kepler, Deutinger & Harms	The relationship between transformational leadership, product innovation and performance in SMEs	Journal of Small Business and Entrepreneurship
5	2013	Overstreet, Hanna, Byrd, Cegielski & Hazen	Leadership style and organisational innovativeness drive motor carriers toward sustained performance	The International Journal of Logistics Management
6	2013	Noruzy, Dalfard, Azhdari, Nazari, Shirkouhi & Rezazadeh	Relations between transformational leadership, organisational learning, knowledge management, organisational innovation, and organisational performance: an empirical investigation of manufacturing firms	International Journal of Advanced Technology
7	2013	Golla & Johnson	The relationship between transformational and transactional leadership styles and innovation commitment and output at commercial software companies	The Business Review, Cambridge

Source: Sethibe and Steyn (2015)

Table 5.5 is a summary of the findings of Sethibe and Steyn (2015) from their systematic review of the state of research on the relationship between leadership style, innovation, and organisational performance. In assessing the concepts (keywords) used, Sethibe and Steyn (2015) concluded that most scholars focus exclusively on the transformational leadership style when investigating the relationship between these three constructs (leadership, innovation, and organisational performance). None of the articles use transactional leadership style as a concept (Sethibe and Steyn, 2015).

Table 5.5: Key findings regarding knowledge of leadership, innovation, and performance

Building blocks of science	Findings
Concepts	The most common **keywords** are: Transformational leadership and organisational performance. Others include organisational learning, knowledge management, organisational innovation, innovation, dynamic capabilities, and organisational innovativeness
Statements	The following is a synthesis of the **definitions** found in the articles: *Leadership:* Transformational leaders focus on long term vision and inspire and motivate followers to buy into that vision. Transactional leaders focus on individuals' self-interest. Innovation: Introduction of a new idea, product, service, or process. *Organisational performance:* The ability to provide a service efficiently and effectively to the customer while maintaining superior financial returns.
	Several **hypotheses** recurred in the articles: Transformational leadership style is positively and significantly associated with innovation. Innovation is positively and significantly associated with superior organisational performance. However, when both transformational and transactional leadership were assessed, the results revealed that transactional leadership style is better suited to fostering organisational innovation, whereas transformational leadership style is better suited to improving organisational performance
Conceptual Framework	The following **typologies** were common in the articles*: Leadership:* Leadership style is classified into two most popular known styles of leadership, namely, the transformational and transactional leadership styles. The studies investigated do not mention other types of leadership styles. *Innovation:* None of the studies investigated explore how innovation typologies will impact the nature of the relationship between these three constructs. *Performance:* The two typologies of organisational performance are operational performance and financial performance. The results reveal that transformational leadership is positively associated with operational performance and in turn leads to superior financial performance. However, only one study explored these typologies. None of the studies explored these typologies using both transformational and transactional leadership styles
	There was little distinction between the **models** presented: The synthesis of all the models developed reveals that leadership style influences organisational innovation and, in turn, innovative organisations exhibit superior organisational performance compared to that of competitors
	Although none of the studies explicitly mention the **paradigm** adopted, it can be deduced that researchers adopted a positivist approach to the epistemology paradigm

Source: Sethibe & Steyn (2015)

The historical advancement of innovation management is evolutionary in nature, where organisations adapt innovation management to the changing societal and business conditions to overcome the disadvantages of preceding innovation management principles. The aspiration to overcome these disadvantages and the need to adapt to a changing environment are interrelated (Adams *et al*., 2006; Ortt & Duin, 2008; Dodgson *et al*., 2013; Espinosa-Cristia, 2019).

5.8 THE GAP IN LITERATURE

Although diversity and diversity management seem to be attracting attention in contemporary organisations in recent times, few researchers have investigated its importance to organisational strategies and performance. Kundu and Mor (2017) learnt that employees' perception of promotion of gender diversity was positively related to organisational performance. Odita and Egbule (2015) discovered that cultural diversity, team building, and group training mediate between workforce diversity and organisational effectiveness. Suri and Sharma (2011) found a significant positive relationship between diversity management and the organisational effectiveness of private organisations. However, it is doubtful whether any empirical studies have examined the possible influence of diversity management on organisational efficiency, innovation and performance. Furthermore, it is not certain if any studies have attempted to model the relationship between key dimensions of workplace diversity, innovation and organisational performance (Sethibe & Steyn, 2015). This study seeks to bridge these gaps in diversity and diversity management literature in the South African construction industry.

5.9 THE CONCEPTUAL FRAMEWORK OF THE STUDY

Gender-diverse organisations implementing multiple supportive diversity management initiatives create an environment where diversity is embraced, and differences are celebrated. Nevertheless, little is known about how a diverse environment moderates the relationship between diversity initiatives, innovation, and organisational performance. Analysing the moderating effects of a diversity environment may help refine past findings and achieve a more precise and specific understanding of the diversity management initiatives and performance relationship (Chin *et al.*, 2016; Pretorius *et al.*, 2018; Simmons *et al*., 2020; Baker *et al*., 2021). The goal of the leadership, diversity, and innovation literature review was to develop a framework that can help link the ability of South African construction industry leadership to manage diversity and innovation for organisational performance that supports the interactional model of the impact of diversity on individual career outcomes, organisational effectiveness, and inclusive problem-solving that contribute to the South African construction industry's ability to provide inclusive solutions to the country's societal infrastructure challenges, reduce unemployment, contribute to inclusive infrastructure development programs and contribute to economic growth and society upliftment. As a conceptual framework this study proposes to assess the leadership challenges associated with effectively managing diversity and innovation

in the South African construction industry. The data collected will contribute to the development of a framework articulating the mediating influence of leadership on the relationship between diversity and innovation to advance organisational performance in the South African construction industry. The goal of the framework is to provide organisational leaders in the South African construction industry with a leadership mediation process. This process is envisioned to equip them with the strategies of the transformational leadership approach and the attributes required to overcome challenges in driving, and managing, workforce diversity in the industry for improved creativity, collaboration, and innovation. Figure 5.1 is a diagrammatic depiction of the conceptual framework of this study.

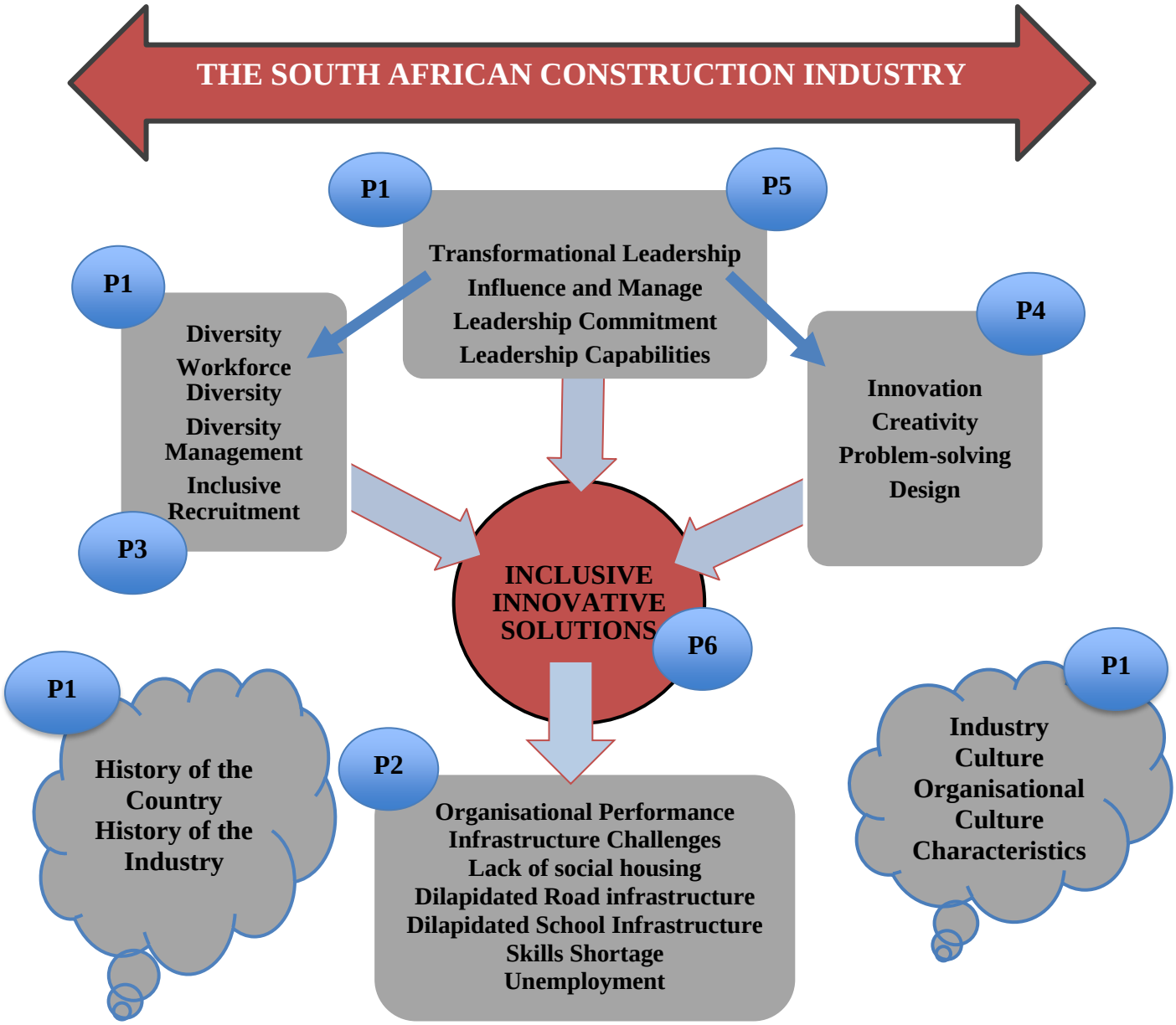


Figure 5.1: Diagrammatic depiction of this study's conceptual framework

Please see below the propositions shown in relation to the conceptual framework of the study:

P1: There is a direct relationship between the lack of diversity in the South African construction industry and its rigid, negative, and untransformed characteristics.

P2: There is a direct relationship between the South African construction industry's inability to effectively respond to economic and transformational challenges and the lack of diversity in the industry.

P3: There is a direct relationship between the South African construction industry organisations' unwillingness to recruit from all demographic categories and the lack of diversity and innovation in the industry.

P4: There is a relationship between the ability of heterogeneous organisations to outperform homogeneous organisations on problem-solving, creativity and innovation and the lack of diversity in homogeneous organisations.

P5: There is a relationship between the success of heterogeneous organisations and transformational leadership and commitment to effectively manage diversity and a diverse workforce.

P6: There is a clear relationship between the South African construction industry's leadership ability and commitment to drive and manage diversity and innovation and organisational performance.

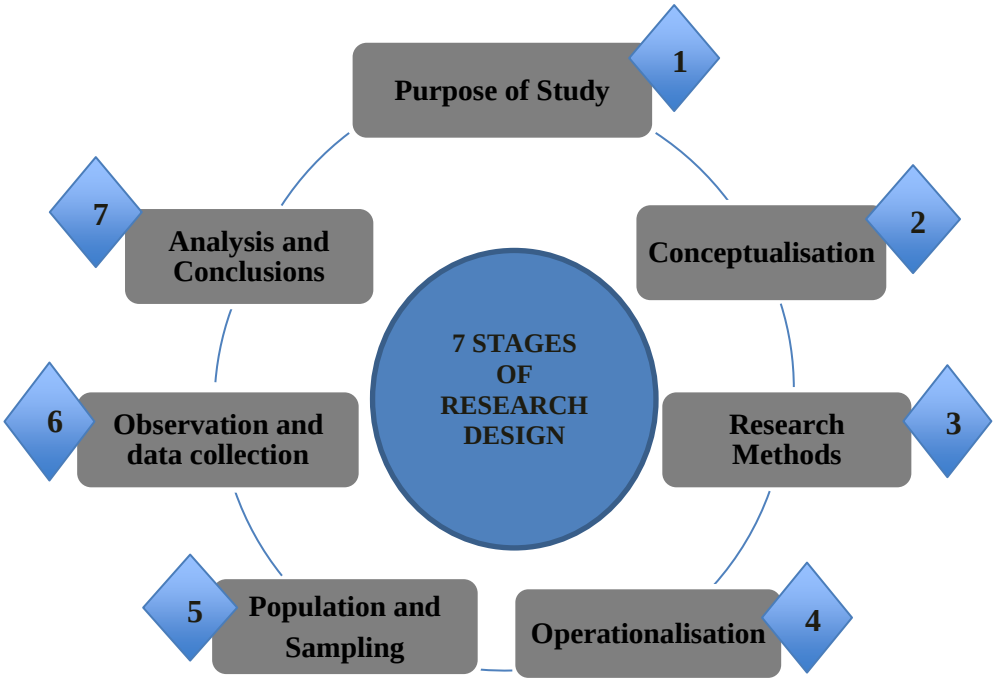
5.10 SUMMARY OF THE CHAPTER

This chapter provided the theoretical framework and highlighted some of the theories that informed the conceptual framework of this study. The conceptual framework was developed to address the gaps in the literature and the limitations in existing theories. The conceptual framework also depicted the relational propositions to be evaluated in this study. The following chapter will outline and explain the research methodology and design used in the study.

CHAPTER SIX:
RESEARCH DESIGN AND METHODOLOGY

6.1 INTRODUCTION

The relationship between leadership, diversity, and innovation in the South African construction industry is a complex and challenging study with many variables. Investigating the relationship and interdependencies between the elements of the study requires an appropriate methodological approach for collecting and analysing the data. According to Abutabenjeh and Jaradat (2018), a research design is a blueprint to guide the process by setting out how a study will move from the research purpose/questions to the outcomes. It is a thorough planning process used to collect and analyse data to increase the understanding of a given topic. This chapter explains the research design and methodology used in the study and delineates the logical sequence to connect the empirical data to the research questions and, eventually, to the research results. This chapter also presents the research philosophy for this study, the design of the data collection instrument, the unit of analysis, the techniques of data analysis, and the criteria applied to judge the quality of the research design. The ethical considerations taken in conducting the study are also outlined in the chapter.

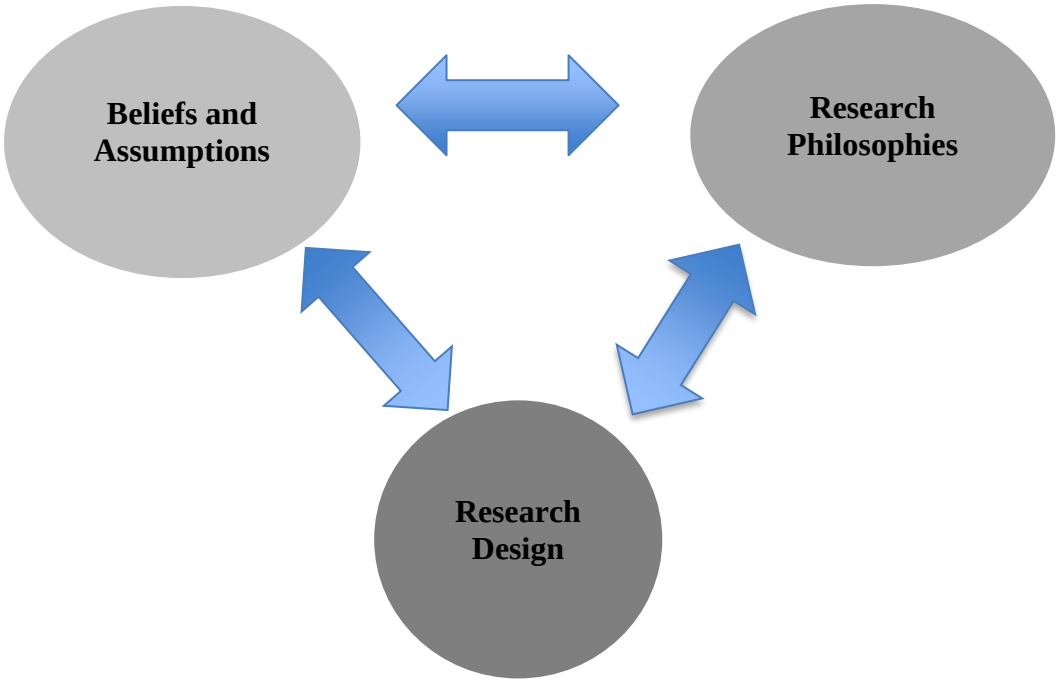


Source: Abutabenjeh & Jaradat (2008)

Figure 6.1: The Seven Stages of Research Design

6.2 THE RESEARCH PHILOSOPHY

According to Saunders and Bristow (2015) a research philosophy is a system of beliefs and assumptions about the development of knowledge. "The process of exploring and understanding one's own research philosophy requires one to hone the skill of reflexivity, that is, to question one's own thinking and actions, and learn to examine one's own beliefs with the same scrutiny as one would apply to the beliefs of others" (Haynes, 2012 cited by Saunders & Bristow, 2015: 131). According to Baldwin (2014), the research philosophy is the most basic level at which the research methods should be considered, and that philosophy drives the interrogative processes that generate the research questions and informs the research. The three major research philosophy assumptions identified by Saunders and Bristow (2015) are ontology, epistemology, and axiology.



Source: Saunders & Bristow (2015)

Figure 6.2: Developing the research philosophy: a reflexive process

6.2.1 Ontology

Ontology deals with what can be partially, rationally understood. Therefore science, in all its branches, is the most powerful and successful ally to ontology (Poli & Seibts, 2010). Research ontology is the term for the philosophical starting point for investigation, aimed at finding reasons that can be said to be true, whether by linking cause with effect or by seeking an

understanding of theories (Bleiker *et al*., 2019). In philosophy, the concept of truth itself is open to debate; while many will be familiar with the idea of the truth as something that objectively describes fact or reality, not all philosophers see truth in this way, and some argue that it depends on subjective views and context. From this position, truth is constructed in and by the mind from psychological processes such as connections, and experiences. A researcher's approach to the question of what is true about the phenomenon they are studying determines the entire pathway of the research project from beginning to conclusion (Bleiker *et al*., 2019).

According to Saunders and Bristow (2015), ontology refers to assumptions about the nature of reality. Ontological assumptions shape the way in which one sees and approaches their research project. Positivists (objectivism) see truth as an empirical reality and tend to make connections or infer causality by manipulating observable and measurable phenomena to make generalisations and predictions. Interpretivist (subjectivism) researchers see truth as socially established; knowledge as created not revealed, and reality as subjective. Studies undertaken from this position investigate feelings and experiences (Bleiker *et al*., 2019).

The interpretivist paradigm has been adopted for this research because the study is investigating the relationship between leadership, diversity, and innovation in the South African construction industry. These are elements that involve the perceptions, feelings, and experiences of the participants in relation to the three elements and will, therefore, involve a level of subjectivism.

6.2.2 Epistemology

Epistemology is the study of knowledge, meaning the theoretical underpinning of the methods. For the research to be coherent, the researcher's ontological position must link with the epistemological approach. This, in turn, informs the methodology and the method (tools) by which the research is conducted (Bleiker *et al*., 2019). According to Saunders and Bristow (2015) epistemology concerns assumptions about knowledge, what constitutes acceptable, valid, and legitimate knowledge, and how that knowledge is communicated to others. Closely connected with ontology and its consideration of what constitutes reality, epistemology considers views about the most appropriate ways of enquiring into the nature of the world (Easterby-Smith, Thorpe & Jackson, 2008).

Epistemologically, this study is abductive, and interpretivism ontology inclined. A pilot survey was conducted with six participants. When the pilot was concluded, and the constructs of the study were confirmed, a closed-ended questionnaire was distributed for the purpose of gathering quantitative data.

6.2.3 Axiology

Axiology is the branch of philosophy that studies judgements about values including both ethics and aesthetics. Values are the preferences of what we consider good, in various fields of life. Value might be some sort of existent with a particular matter or matters that can be discussed in terms of its nature and its relationship to other existents. Values may be objective or subjective, constant, or changing (Tufail, 2012). Axiology centres on questions about what must be. It deals with the nature of values and relates to the teaching of moral values and character development. Most philosophers include, as subdivisions of axiology, Ethics, the branch of Philosophy that is concerned with morals; and Aesthetics, the branch that is concerned with the issues of beauty and art. Values guide our decisions as to what is good, true, and right. Therefore, they depend as much on our feelings as on our thoughts (Tomar, 2014).

According to Saunders and Bristow (2015) axiology refers to the role of values and ethics within the research process. Researchers must question how they deal with both their own values and those of the research participants. Values are the driving reason for all human action. Researchers demonstrate axiological skill by being able to articulate their values as a source for making judgements about what research they are conducting, and how they go about doing it (Saunders & Bristow, 2015).

In this study, those who participated in the semi-structured interviews were given the freedom and space to freely express their views and candidly share their experiences in relation to leadership, diversity, and innovation in the South African construction industry.

All research philosophies make three major types of assumptions: ontological, epistemological, and axiological. Philosophies can be distinguished by the differences and similarities in their ontological, epistemological, and axiological assumptions, and can be further differentiated in terms of where their assumptions fall on the objectivism–subjectivism continua (Saunders & Bristow, 2015). Table 6.1 depicts philosophical assumptions as a multidimensional set of continua.

Table 6.1: Philosophical assumptions as a multidimensional set of continua.

Assumption Type	Questions	Continua with two sets of extremes	
		Objectivism ⟷	**Subjectivism**
Ontology	• What is the nature of reality? • What is the world like? • For example: • What are organisations like? • What is it like being in an organisation? • What is it like being a manager or being managed?	Real External One true reality (universalism) Granular (things) Order	Nominal Decided by convention Socially constructed Multiple realities (relativism) Flowing (processes) Chaos
Epistemology	• How can we know what we know? • What is considered acceptable knowledge • What constitutes good-quality data? • What kinds of contribution to knowledge can be made?	Adopt assumptions of the natural scientist Facts Numbers Observable phenomena Law-like generalisations	Adopt the assumptions of the arts and humanities Opinions Narratives Attributed meanings Individuals and contexts, specifics
Axiology	• What is the role of values in research? • How should we treat our own values when we do research? • How should we deal with the values of research participants?	Value Free Detachment	Value Bound Integral and reflexive

Source: Saunders & Bristow (2015)

6.3 RESEARCH PARADIGMS IN THE CONSTRUCTION INDUSTRY

Research "paradigm is a basic belief system and theoretical framework with assumptions about ontology, epistemology, methodology (axiology) and methods. It is the researcher's way of understanding the reality of the world and studying it" (Rehman & Alharthi, 2016: 51). A research paradigm intrinsically reflects the researcher's beliefs about the world that they live in and want to live in. It constitutes the abstract beliefs and principles that shape how a researcher sees the world and thus, interprets and acts within that world (Kivunja & Kuyini, 2017).

A research paradigm is the conceptual lens through which the researcher examines the methodological aspects of their research project to determine the research methods to be used and how the data will be analysed. Paradigms are important because they provide beliefs and principles which influence what should be studied, how it should be studied, and how the

results of the study should be interpreted (Kivunja & Kuyini, 2017). Research paradigms are the set of fundamental theories, methods, values, and epistemological assumptions that members of a scientific community share at a given time. The paradigm is the disciplinary medium in a field. This would include assumptions regarding the most pertinent problems to tackle, the most appropriate methods to be used, and what an acceptable solution to the problems would look like (Creswell & Creswell, 2017; Bonache & Festing, 2020).

According to Dainty (2008) and Adejimi *et al.* (2010) while the other research domains have established practices, construction management is a relatively new field which draws from both the natural and social sciences. Therefore, many different theories of knowledge or paradigms compete for methodological primacy within the construction industry. Researchers in the construction industry draw from both traditions to ensure that each research project is designed in a way that remains sensitive to the theoretical and philosophical foundations upon which their enquiry is based. However, the extent to which this has resulted in a multiplicity of methodological viewpoints is debatable.

Dainty (2008) and Adejimi *et al.* (2010) further states that for many years positivist and quantitative methods have been in the ascendancy in construction management research. This has promoted a convention of the application of natural science methods to study social phenomena and an attendant focus on explaining human behaviour. In contrast, proponents of interpretivism, as an alternative paradigm, espouse the importance of understanding human behaviour, which places an emphasis on the empathetic comprehension of human action rather than the forces which shape it.

This perspective arguably has the potential to provide complementary insights, enriching the understanding of the perspectives of those who work in the industry (Dainty, 2008; Adejimi *et al.*, 2010). To determine the best research paradigm for this study (the key elements being leadership, diversity and innovation), Table 6.2 compares five of the major research paradigms reviewed in determining the research paradigm for this study.

Table 6.2: Comparison of five research philosophies in research

Ontology (Nature of being or reality)	Epistemology (What constitutes acceptable knowledge)	Axiology (Role of values)	Typical methods
Positivism			
Real, external, independent One true reality (universalism) Granular (things) Ordered	Scientific method Observable and measurable facts Law-like generalisations Numbers Causal explanation and prediction as contribution	Value-free research Researcher is detached, neutral and independent of what is researched Researcher maintains objective stance	Typically deductive, highly structured, large samples, measurement, typically quantitative methods of analysis, but a range of data can be analysed
Critical Realism			
Stratified/layered (the empirical, the actual and the real) External, independent Intransient Objective structures Causal mechanisms	Epistemological relativism Knowledge historically situated and transient Facts are social constructions Historical causal explanation as contribution	Value-laden research Researcher acknowledges bias by world views, cultural experience and upbringing Researcher tries to minimise bias and errors Researcher is as objective as possible	Retroductive, in-depth historically situated analysis of pre-existing structures and emerging agency. Range of methods and data types to fit subject matter
Interpretivism			
Complex, rich Socially constructed through culture and language Multiple meanings, interpretations, realities Flux of processes, experiences, practices	Theories and concepts too simplistic Focus on narratives, stories, perceptions and interpretations New understandings and worldviews as contribution	Value-bound research Researchers are part of what is researched, subjective Researcher interpretations key to contribution Researcher reflexive	Typically, inductive. Small samples, in-depth investigations, qualitative methods of analysis, but a range of data can be interpreted
Postmodernism			
Nominal Complex, rich Socially constructed through power relations Some meanings, interpretations, realities are dominated and silenced by others Flux of processes, experiences, practices	What counts as 'truth' and 'knowledge' is decided by dominant ideologies Focus on absences, silences and oppressed/repressed meanings, interpretations and voices Exposure of power relations and challenge of dominant views as contribution	Value-constituted research Researcher and research embedded in power relations Some research narratives are repressed and silenced at the expense of others Researcher radically reflexive	Typically, deconstructive – reading texts and realities against themselves In-depth investigations of anomalies, silences and absences Range of data types, typically qualitative methods of analysis

Ontology (Nature of being or reality)	Epistemology (What constitutes acceptable knowledge)	Axiology (Role of values)	Typical methods
Pragmatism			
Complex, rich, external 'Reality' is the practical consequence of ideas Flux of processes, experiences, and practices	Practical meaning of knowledge in specific contexts 'True' theories and knowledge are those that enable successful action Focus on problems, practices and relevance Problem-solving and informed future practice as contribution	Value-driven research initiated and sustained by researcher's doubts and beliefs Researcher reflexive	Following research problem and research question Range of methods: mixed, multiple, qualitative, quantitative, action research Emphasis on practical solutions and outcomes

Source: Saunders & Bristow (2015)

6.3.1 Positivism

Positivism adopts that reality exists independently of humans, it is not resolved by their senses, and it is governed by immutable laws. The ontological position of positivists is that of realism. Positivists strive to understand the social world like the natural world. The epistemological position of positivists is that of objectivism. Researchers enter as objective observers to study phenomena that exist independently of them, and they do not affect or disturb what is being observed. They will use language and symbols to describe phenomena in their real form, as they exist, without any interference whatsoever (Rehman & Alharthi, 2016). Positivism relates to the philosophical stance of natural scientist and entails working with an observable social reality to produce law-like generalisations. It promises unambiguous and accurate knowledge. The label positivism refers to the importance of what is posited, meaning it is certain. This emphasises the positivist focus on the strictly scientific empiricist method designed to yield pure data and facts, uninfluenced by human interpretation or bias (Saunders & Bristow, 2015; Creswell & Creswell, 2017).

Positivism seeks to explain and predict what happens in the social world by searching for regularities and causal relationships between its fundamental elements. Positivist researchers are committed to realist ontology, which means that entities and facts in the research domain exist and that their existence is objective and mind-independent (Bonache & Festing, 2020).

6.3.2 Critical Realism

According to Haigh *et al.* (2019), critical realism is a relatively new paradigm position. It represents a combination of views that contrast with those associated with traditional positivist and interpretivist positions. Critical realism asserts that there is a reality that exists independent of the thoughts about it and that observing may increase confidence levels about what exists.

The ontological position of critical theorists is that of historical realism. It is assumed that a reality exists, but it has been shaped by cultural, political, ethnic, gender and religious factors which interact with each other to create a social system. Epistemologically, critical theory is subjective in that it is assumed that no object can be researched without being affected by the researcher (Rehman & Alharthi, 2016). According to Saunders & Bristow (2015) it is important to distinguish the philosophy of critical realism from the more extreme form of realism underpinning the positivist philosophy, which is known as direct realism. Direct realism asserts that what we experience through our senses portrays the world accurately, meaning that what one sees is what one gets. For critical realists, reality is the most important philosophical consideration, a structured and layered ontology is crucial. Within the critical realists´ focus on the historical analysis of structures, they embrace epistemological relativism, a subjectivist approach to knowledge.

6.3.3 Interpretivism

Interpretivism, like critical realism, developed as a critique of positivism but from a subjectivist perspective. It is an approach based on philosophical phenomenology. Its objective is to make sense of the meanings and subjective intentions of individuals in each context, without imposing any prior analytic categories. This attempt to understand the world from the perspective of its participants cannot be conducted without the interpretative effort of the researcher, hence the *interpretivism* in the name of this methodology. In contrast to positivism, which assumes that there is an objective world that can be represented by concepts and propositions, the interpretive phenomenological approach asserts that we do not live in a singular social reality but rather in multiple socially constructed views of social reality. (Saunders & Bristow, 2015; Bonache & Festing, 2020). Interpretivism sees a difference between the objects of natural science and people, in that phenomena have different subjective meanings for the actors studied (Dainty, 2008; Adejimi *et al.*, 2010).

According to Goldkuhl (2012), interpretivism is not a unified and unequivocal tradition. There are many forms of interpretivism, such as conservative, constructivist, critical and deconstructionist. In interpretivism, scientific knowledge is seen to be of second-order character; therefore, it must be based on the meanings and knowledge of the studied actors. The core idea of interpretivism is to work with subjective meanings that already exist in the social world, meaning to acknowledge their existence, to reconstruct them, to understand them, to avoid distorting them, and to use them as building blocks in theorising. The aim of understanding the subjective meanings of participants in studied domains is essential in the interpretive paradigm. Interpretivism emphasises that humans are different from physical phenomena because they create meanings. Interpretivists study these meanings (Goldkuhl, 2012; Saunders & Bristow, 2015).

6.3.4 Postmodernism

Postmodernism emphasises the role of language and of power relations. It seeks to question accepted ways of thinking and to give voice to alternative marginalised views. Postmodernists go further than interpretivists in the critique of positivism and objectivism, attributing more importance to the role of language. Postmodernism rejects the modern objectivist, realist ontology of things and, instead, emphasises the chaotic primacy of flux, movement, fluidity, and change (Saunders & Bristow, 2015).

Lăzăroiu (2018) argues that postmodernism focuses on the cruciality of culture in the changes occurring at all levels, from the ordinary routines of distinct social communities to more obstruse artistic, knowledgeable, and scholarly undertakings, indicating the transformations that affect the creation, distribution, and consumption of culture. Postmodernism puts forward a multiple grasp of truth, claiming that all knowledge is contingent, historical, and prolix. According to Saunders & Bristow (2015), postmodernist researchers seek to expose and question the power relations that sustain dominant realities.

6.3.5 Pragmatism

According to Kaushik & Walsh (2019), pragmatism as a research paradigm refuses to involve itself in contentious metaphysical concepts such as truth and reality. As an alternative, it accepts that there can be single or multiple realities that are open to empirical inquiry. Pragmatism asserts that concepts are only relevant where they support action, and attempts to reconcile both objectivism and subjectivism, facts and values, accurate and rigorous

knowledge, and different contextualised experiences. It does this by considering theories, concepts, ideas, hypotheses, and research findings not in an abstract form, but in terms of the roles they play as instruments of thought and action and in terms of their practical consequences in specific contexts (Saunders & Bristow, 2015).

Pragmatism orients itself toward solving practical problems in the real world. It emerged as a method of inquiry for more practical-minded researchers. For pragmatists, an inquiry is effective only if it achieves its purposes (Kaushik & Walsh, 2019). Reality matters to pragmatists as practical effects of ideas, and knowledge is valued for enabling actions to be conducted successfully. For a pragmatist, research starts with a problem and aims to contribute practical solutions that inform future practice (Saunders & Bristow, 2015).

6.3.6 The research paradigm for this study

Based on the comparison of the above five research paradigms as depicted in Table 6.2. and the following discussion, this study adopted the interpretive mixed method approach. According to Dainty (2008) and Adejimi *et al.* (2010) interpretivism emphasises the empathetic comprehension of human action rather than the forces that shape it, and this perspective has the potential to provide complementary insights, thereby enriching the understanding of the perspectives of those who work in the construction industry. The essence of this study seeks to understand the views, perspectives, and actions of the South African construction industry workforce in relation to how they interact with the concepts of leadership, diversity, and innovation. The interpretivist paradigm encapsulates this. In this study the interpretivist paradigm is supported with the social constructivism philosophy. The interpretative epistemology is generally associated with terms such as qualitative, subjective, a-posteriori, unstructured, attitudes, opinions, behaviours, perceptions, and induction (Holt & Goulding, 2017).

6.4 THE RESEARCH APPROACH

According to Dainty (2008), the construction management field appears to be firmly rooted within the positivist tradition, as it has shown an entrenched adherence to positivist methods within the community and is reluctant to embrace paradigmatic change. This presents a view of a community reluctant to adopt the kinds of radical qualitative research methods which could provide richer insights into industry practice (Dainty, 2008; Adejimi *et al.*, 2010).

As an emerging discipline, the construction industry often borrows theory and research methodologies from other mature disciplines such as social science, natural science, engineering and business management studies (Dainty, 2008; Fellows & Liu, 2020). Research designs are the plans and procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. There are three types of research approaches: quantitative, qualitative, and mixed methods (Creswell, 2008; Creswell & Creswell, 2017; Abutabenjeh & Jaradat, 2018).

6.4.1 Quantitative Research Approach

Quantitative methods are the foundation of modern science. This approach to research usually starts with a specific theory, either proposed or previously developed, which leads to specific hypotheses that are then measured quantitatively and rigorously analysed and evaluated according to established research procedures (Holton & Burnett, 2005).

A quantitative research method relies on quantifying and analysing variables to get results. It involves the utilisation and analysis of numerical data, using specific statistical techniques to answer questions like who, how much, what, where, when, how many, and how. Therefore, the quantitative research method explains an issue or phenomenon through gathering data in numerical form and analysing it with the aid of mathematical methods, in particular, statistical methods (Apuke, 2017). The quantitative method seeks to obtain accurate and reliable measurements that allow a statistical analysis. Quantitative research focuses on objectivity and is especially appropriate when there is the possibility of collecting quantifiable measures of variables and inferences from samples of a population. Quantitative research adopts structured procedures and formal instruments for data collection. The data is collected objectively and systematically (Queirós *et al.*, 2017). In the early stages of data collection for this study, a closed-ended questionnaire was distributed to a small population to determine and ensure that the concepts being investigated were understood by the participants. Upon conclusion of the pilot, the closed-ended questionnaire was distributed to a larger population for the collection of the quantitative data for this study.

6.4.2 Qualitative Research Approach

Qualitative research is not concerned with numerical representativity but rather with deepening the understanding of a given problem. Often in qualitative research, the researcher is both the subject and the object of the research. The objective of the qualitative method is to produce in-

depth and illustrative information to understand the various dimensions of the problem under analysis (Queirós *et al.*, 2017). Maxwell (2013), cited in Queirós *et al.* (2017), advocates that qualitative research works with the universe of meanings, motives, aspirations, beliefs, values, and attitudes, which corresponds to a deeper space of relationships, processes and phenomena that cannot be reduced to the operationalisation of variables.

Qualitative research explores and understands the meanings people assign to their experiences and seeks to shed light on meanings that are less perceptible, with the objective of investigating the complexities of the social world. Qualitative research is designed to study people's life experiences, as it favours describing, exploring, understanding, and interpreting the views and experiences of the participants in a study. Furthermore, qualitative research aims to gain a better understanding through first-hand experience, truthful reporting, and quotations of actual conversations with participants (Tuffour, 2017).

As a research methodology, the qualitative research method infuses an added advantage to the exploratory capability that researchers need to explore and investigate their research studies. Qualitative methodology allows researchers to advance and apply their interpersonal and subjectivity skills to their exploratory research processes (Alase, 2017). According to Williams and Moser (2019) qualitative research provides opportunities to locate the origin of a phenomenon, explore possible reasons for its occurrence, codify what the experience of the phenomenon meant to those involved, and determine if the experience created a theoretical frame or conceptual understanding related to the phenomenon. In this study semi-structured interviews were conducted to investigate and understand the views, experiences, and perspectives that leaders within the South African construction industry had about the relationship between leadership, diversity, and innovation within the construction industry, and how this relationship impacted the industry's ability to provide inclusive innovative solutions.

6.4.3 Mixed Method Approach

The mixed methods approach to research provides researchers with the ability to design a single research study that answers questions regarding the nature of a phenomenon from a participant's point of view as well as the relationship between measurable variables (Mitchell, 2018). According to Dunning *et al*. (2008), using more than one method of analysis is referred to as a mixed method approach. Originally, the mixed method approach was an outgrowth of the triangulation of methods movement. The main goal of triangulation is to confirm a study's results by using qualitative and quantitative methods. A mixed method approach, however,

goes beyond the initial goal of triangulation, using multiple methods to gain a better understanding of results, discover new perspectives, or develop new measurement tools. Therefore, there are two broad goals of using mixed methods, namely: (1) confirmation; and (2) comprehension of results (Dunning *et al*., 2008).

Mixed methods can be conceptualised as the use or blending of research methods from both quantitative and qualitative traditions. Despite the considerable complexity in how these methods may be used together, increasing numbers of researchers are embracing the concept of mixed methods, and published articles using mixed methods are now more common than before (Pole, 2007).

Pole (2007) argues that mixed methods approaches can be superior to single method designs because they can answer questions that the single paradigms cannot. The methods researchers use depends on the nature of the questions being asked. Certain questions cannot be answered by quantitative methodology, and others cannot be answered by qualitative studies. Researchers can combine approaches so that one verifies the findings of the other, one can serve as the groundwork for the other, and the approaches may complement each other to explore different aspects of the same question.

Mixed method designs are viewed as preferable in research because they provide a better understanding of research issues than either qualitative or quantitative approaches alone. The promise of mixed methods lies in its ability to move beyond the confines of existing methodological approaches and develop innovative solutions to important and complex problems (Palinkas *et al*., 2015). Tables 6.3 and 6.4 show the major mixed methods design steps, purposes and priorities for the appropriate adoption in this study's research methodology.

Table 6.3: The six major mixed method design types

The six major mixed method design types
Convergent Parallel In this design, the researcher uses concurrent timing to implement the quantitative and qualitative strands during the same phase of the research process, prioritises the methods equally, keeps the strands independent during analysis, and mixes the results during the researcher's overall interpretation of the data.
Explanatory Sequential In this two-phase design, the research starts with the collection and analysis of quantitative data, followed by the collection and analysis of qualitative data to help explain the initial quantitative results.
Exploratory Sequential In this two-phase design, the research starts with the collection and analysis of qualitative data, followed by the collection and analysis of quantitative data to assess or generalise the initial qualitative findings.
Embedded In this design, the researcher collects and analyses both quantitative and qualitative data within a traditional quantitative or qualitative design to enhance the overall design in some way.
Transformative This is a design that the researcher shapes within a transformative theoretical framework seeking to address the needs of a specific population and to call for change.
Multiphase This design combines both sequential and concurrent strands, collected over a period, and the implementation of distinct projects or phases within an overall program of study.

Source: Guest & Fleming (2014)

Table 6.4: Mixed design methods, their process, purpose, interaction and priority

Research Design	Process	Purpose	Interaction Level	Priority
Convergent Parallel (concurrent)	Qualitative Quantitative	To obtain different but complementary data to answer the same research question	Data collected and analysed independently	Equal
Sequential Explanatory	Quantitative to Qualitative	Qualitative data is collected to explain the quantitative findings	Quantitative data frames qualitative data collection	Quantitative dominant
Sequential Exploratory	Qualitative to Quantitative	Quantitative data builds on qualitative findings to provide generalisability	Qualitative date frames the quantitative data collection	Qualitative dominant
Embedded/ Nested	Qualitative (Quantitative) or Quantitative (Qualitative)	To obtain different data to answer a complementary research question	Embedded data set provides answers to a complementary research question	Can be either qualitative or quantitative data dominant

Source: Halcomb & Hickman (2015)

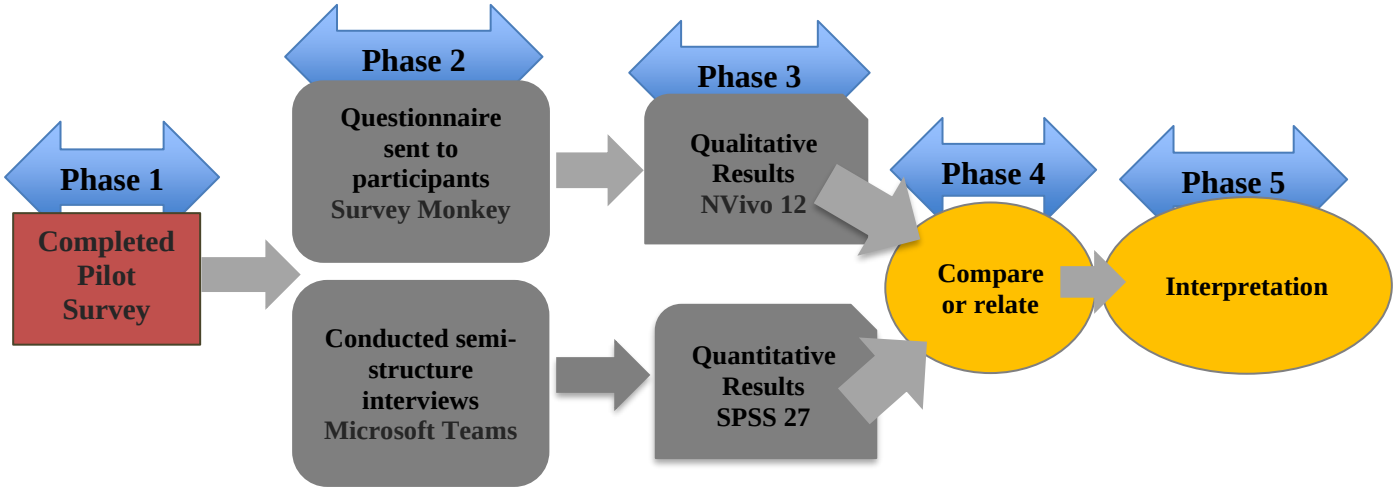
6.4.4 The research approach adopted in this study

The previous section discussed the design and different characteristics of a variety of mixed method approaches. These characteristics were reviewed to provide knowledge and background in selecting the appropriate mixed method for this study. Research methodology in social enquiry refers to far more than the methods adopted in a particular study and incorporates the rationale and the philosophical assumptions that underlie a particular study. These, in turn, impact the actual research methods that are used to investigate a problem and to collect, analyse and interpret data (Dainty, 2008). Therefore, research methods cannot be viewed in isolation from the ontological and epistemological position adopted by the researcher (Dainty, 2008). According to Creswell (2014) the selection of the most appropriate approach for a study depends on its research problem, the type of data required and the analysis of the data. The aim of this study was to *investigate and analyse the role of leadership in managing the relationship between diversity and innovation in the South African construction industry.* To achieve the stated aim, a convergent parallel mixed method approach was used for the purpose of obtaining the views of all the professionals working (the construction industry work force) within the South African construction industry. The research aimed to gain information about these professionals' views, experiences, and the level of importance of the constructs under investigation. To this end, a pilot study was conducted with a small sample of six to evaluate the comprehensibility of the questions. Thereafter, a questionnaire was distributed via the survey monkey digital platform to professionals in various roles and levels within the South African construction industry. Semi-structured interviews were concurrently conducted via Microsoft teams.

Early-stage decisions have the greatest impact in the construction industry, and attention at conception and realisation stages of projects is imperative. Decisions are influenced by actors' interdependencies; thus, it is important to understand how actors determine the meanings of their situations and actions within the construction industry (Fellows & Liu, 2018). Based on this view, and this investigation into the South African industry actors' interdependencies with the elements, it was determined that the best approach for the purposes of this study was the interpretivist qualitative approach, as part of the convergent parallel mixed method. Given the complexities of this study, concurrently combining the interpretivist qualitative approach with the positivist quantitative approach, was deemed to be the best approach.

Furthermore, using these combined approaches ensured that a larger population of the South African construction industry was surveyed. The mixed research approach provides rich and

valuable insights into the research problems being investigated, as it contributes to a better understanding of research issues when compared with using either qualitative or quantitative approaches alone. Further, the mixed method moves beyond the confines of existing methodological approaches and develop innovative solutions to important and complex problems (Pole, 2007; Dainty, 2008; Dunning *et al*., 2008; Palinkas *et al*., 2015; Maarouf, 2019). The views of these scholars provided the foundation for deciding that the approach most suited for yielding the best results for this study, was the convergent parallel mixed method. Figure 6.3 depicts the convergent parallel mixed method applied in this study.



Adapted from: Razali et al. (2019)

Figure 6.3: Convergent parallel mixed method for this study

6.5 THE STUDY POPULATION AND SAMPLE SIZE

To contribute to academic debate and knowledge, researchers gather data or information from participants. These participants belong to the research population, which is the group of individuals having one or more characteristics of interest to the researcher. As the primary source of data, the population can influence research credibility based on the researcher's understanding, definition, and choice of it (Asiamah *et al.*, 2017). For the pilot survey, conducted in phase one of the study, the researcher selected a small mixed population from the various professions within the construction industry (population size shown in Table 6.5). For the quantitative part of this study, the questionnaire (phase 2), the characteristics of interest encompassed all those who work within the South African construction industry.

6.5.1 Quantitative population and sample size

For the purposes of this study, it was important to capture individuals who worked in various roles within the industry. Consequently, the study population was not limited to registered professions and included junior and senior consulting engineers, quantity surveyors, project managers, construction managers, lecturers, architects and town planners. The questionnaire was distributed through members of some of the industry's registration bodies, such as The South African Institute of Civil Engineering (SAICE) and the Council for the Built Environment (CBE), and through the researcher's industry network. Table 6.5 shows the estimated population size. Table 6.6 depicts the calculated sample size based on the estimated population size.

Table 6.5: Questionnaire Distribution: Estimated Population

Distribution Source	**Estimated Population Size**
Researchers Network	100
CBE	40000
SAICE	16000
Total	56100

Table 6.6: Quantitative data sample size

Quantitative Data – Sample size	
Confidence Level	95%
Confidence Interval (Margin of error)	10%
Estimated Population	56100
Sample proportion	50%
Recommended Sample Size = 96	

Formula to calculate sample size: $n=p(100-p)z^2/E^2$ (Source: Asiamah et al. (2017))

6.5.2 Qualitative population and sample size

For the qualitative part of this study, the semi-structured interviews conducted in phase 2, the characteristics of interest were those that were held by senior leadership roles within the South African construction industry. These were Chief Executive officers (CEO's)/Managing Directors, Technical Directors, Managing Partners, Engineering Managers and Executive Directors within organisations that service the South African construction industry.

The primary service of the organisations included consulting engineering organisations, quantity surveying practices, town planning practices, architectural practices, construction organisations, industry bodies such as Council for the Built Environment (CBE) and South African Forum of Civil Engineering Contractors (SAFCEC). The database of the CIDB was consulted for the purpose of compiling a list of highly ranked construction organisations. Organisations included in the list had to have a CIDB ranking of 5 and above and included consulting organisations. The individual participants who worked within these identified organisations were then sourced through the researcher's industry network. However, the population was not restricted to large organisations, as it included founding partners/CEOs of small construction and architectural practices. The latter, though typically small, play a significant role in the South African construction industry. This sample included leaders of global organisations which have been operating in the South African construction industry for at least 10 years. A total of 24 construction organisational leaders made up the sample size of this qualitative phase of the study.

6.6 THE SAMPLING STRATEGY AND TECHNIQUE

Sampling is a technique used by a researcher to systematically choose a relatively smaller number of representative items or individuals from a pre-defined population. The participants in the sample serve as subjects who provide the data source for observation or experimentation as per the objectives of the study. The sampling technique is an integral part of the research methodology as it helps the researcher to collect data from the correct elements or units of the research. There are two types of sampling techniques in research, probability sampling and non-probability sampling. Probability sampling is any sampling scheme in which the probability of choosing individuals is the same; this is also referred to as random sampling. Non-probability sampling technique is based on the researcher's judgement (Sharma, 2017; Deshpande and Girme, 2019). Table 6.7 depicts the different types of the techniques.

Table 6.7: Different types of sampling techniques

Probability Sampling	Non-Probability Sampling
Simple Random Sampling	Quota Sampling
Systematic Sampling	Purposive Sampling
Stratified Sampling	Self-Selection Sampling
Cluster Sampling	Snowball Sampling

Source: Sharma (2017)

6.6.1 Purposive Sampling Strategy

The development of purposive sampling has a long history. While it is viewed by many as simple and straightforward, equally as many view this type of sampling as complex. The motivation for purposive sampling is the better matching of the sample to the aims and objectives of the research, thus improving the rigour of the study and dependability of the data and results (Campbell *et al*., 2020). Purposive sampling can be used as a non-probability sampling technique when the research does not aim to generate results that will be used to create generalisations pertaining to the entire population (Etikan *et al.,* 2015).

In purposive sampling the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience. It is typically used in qualitative research to identify and select the information-rich cases for the most proper utilisation of available resources. This involves the identification and selection of individuals, or groups of individuals, who are proficient and well-informed with a phenomenon of interest (Etikan *et al.,* 2015; Campbell *et al*., 2020).

6.6.2 Snowball Sampling and Respondent – driven Sampling techniques

In this study non-probability snowball and respondent-driven sampling techniques were adopted. Snowball sampling or chain-referral sampling is defined as a non-probability sampling technique in which the samples have traits that are rare to find. This is a sampling technique, in which existing subjects provide referrals to recruit samples required for a research study. Snowball sampling is one of the most popular methods of sampling in qualitative research, central to which are the characteristics of networking and referral (Parker, Scott & Geddes, 2019).

Respondent-driven sampling (RDS) is a widely used method for sampling from hard-to-reach human populations. Data are collected through peer-referral over social or digital networks, such as the survey monkey platform used in this study. RDS has proven practical for data collection in many difficult settings where participants can't be selected randomly and physically, for example, visiting construction sites and physically distributing questionnaires. RDS is widely used in science research. The limitations are that inference from RDS data requires many strong assumptions because the sampling design is partially beyond the control of the researcher and partially unobserved (Gile *et al.,* 2015).

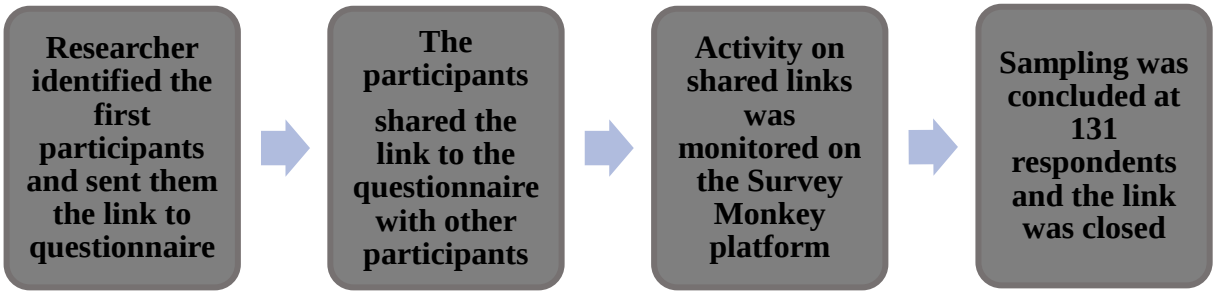
To mitigate the limitations of the digital questionnaire and population representation for the quantitative study where random selection was not used, respondent-driven sampling (RDS) was employed for making quantitative, statistical inferences, with assured probability (Parker *et al.,* 2019). By leveraging relations of trust, RDS accesses hard-to-survey populations; it also promotes representativeness, systematises data collection, and, notably, supports population inference (Parker *et al.,* 2019; Khoury, 2020). In approximating probability sampling, RDS makes strong assumptions. Yet, if strengthened by an integrative mixed method research design, it can shed light on otherwise concealed preferences and behaviours among the populations of interest (Khoury, 2020).

RDS can help researchers reach a large and representative group of hard-to-survey people confidentially. Respondent-driven sampling is an advanced form of referral-chain sampling designed to mitigate sampling bias. Respondent-driven sampling (RDS) combines snowball sampling with a mathematical model that weights the sample to compensate for the fact that the sample was collected in a non-random way (Parker, Scott & Geddes, 2019; Baltes & Ralph, 2020).

6.6.3 Quantitative Phase

Despite its strengths, employing internet surveys has inherent weaknesses. The usefulness of the Internet as a survey mode has always had, and continues to have coverage and sampling limitations, especially for general population surveys. However, these coverage and sampling limitations, and other challenges that have arisen from minimising measurement and nonresponse error, have not impeded the growth and expansion of the Internet as a survey vehicle or platform (Smyth, 2018).

At the time when the quantitative phase of the research was conducted, South Africa was experiencing a Covid-19 level 5, and subsequently level 4, lockdown. As a result, the questionnaire for this phase of the study was distributed via the survey monkey digital platform. These circumstances made it difficult to adopt a random sampling technique. Therefore, a combination of snowballing and RDS sampling technique was used. The survey monkey digital platform was selected for its ease of use, its anonymity feature, and its ability to monitor and manage participants' responses and, thereby, increase reliability. Figure 6.4 shows the process that was implemented.



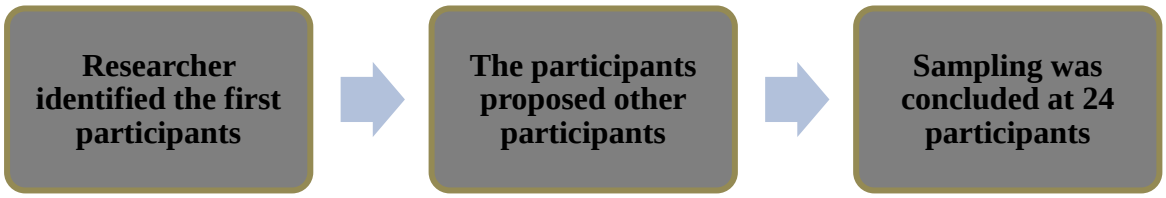
Adapted from: Parker, Scott and Geddes (2019) and Baltes and Ralph (2020)

Figure 6.4: Quantitative sampling technique

6.6.4 Qualitative Phase

The purposive sampling strategy and snow-ball purposive sampling technique were selected for the qualitative phase of the data collection. This was considered the best technique for this study to ensure that the right senior executive leaders within the South African construction industry were interviewed in line with the objectives of this study.

According to Parker, Scott and Geddes (2019) sampling usually concludes once either a target sample size or saturation point has been reached. Therefore, the networking and referral benefits of snow-ball sampling technique were necessary for this study to reach the required levels of saturation. In this study, the qualitative data saturation point was reached at 24 participants. This is when the sampling for the qualitative phase of the study was concluded. Figure 6.5 depicts the process that was followed.



Adapted from: Parker, Scott and Geddes (2019)

Figure 6.5: Qualitative sampling technique process

6.7 THE UNIT OF ANALYSIS

The unit of analysis is the entity that is being analysed in scientific research (Rahim *et al.*, 2020). According to Easterby-Smith and Jackson (2008), this is the entity that forms the basis

of any sample, which may be formed from one or more of the following: countries, cultures, races, industries, organisations, departments, families, groups, individuals, incidents, stories, accidents, and innovations. It is argued that a clearly defined unit of analysis is more imperative in positivist forms of research, including multiple case studies informed by an internal realist perspective, than it is in constructionist forms of research.

The principal aim of this study was to investigate *How does leadership drive, influence and manage the relationship between diversity and innovation to advance organisational performance in the South African construction industry?* The unit of analysis for the qualitative phase of this study was the leaders within the South African construction industry, diversity, and innovation.

The questionnaire in the quantitative phase of the study evaluated the existence of the relationship and level of importance of leadership drive and influence on diversity and innovation, and the unit of analysis was the construction industry workforce and leaders, diversity, and innovation.

6.8 THE METHOD OF DATA COLLECTION

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes (Kabir, 2016). In scientific research there are two sets of data, namely primary data and secondary data. Primary data are original and unique data, directly collected by the researcher from sources by means of observations, surveys, questionnaires, case studies and interviews according to the researcher's requirements. Secondary data are data already collected or produced by others through past research. Sources of secondary data are government publications, websites (google scholar), existing literature such as books, journal articles and internal records (Hox & Boeije, 2005; Boslaugh, 2007; Ajayi, 2017).

Use of secondary data and secondary sources of information in this study

Most research begins with the review of secondary information sources, such as public and private publications, books and scholarly journal papers and, in the modern economy, the use of internet websites to search for these secondary information sources has become the norm (Andrei, 2018). When deciding on the most useful approach for the collection and use of data, choosing between a primary data focus and secondary data focus depends on what is deemed

appropriate to the research question being studied and the resources available to the researcher (Boslaugh, 2007). The focus of this study was to collect, analyse, and use primary data collected by the researcher to draw key findings and provide conclusions and recommendations for further research. Therefore, no secondary data was used in this study, although secondary sources of information, such as scholarly articles, government publications, industry body publications and research articles, were used to develop the literature review and theoretical frameworks of this study.

As per the convergent mixed method approach adopted in this study, the primary sources of data collection were in-depth semi-structured interviews and a questionnaire survey. The primary data were collected concurrently in phase 2 of the research process, as depicted in Figure 6.3.

6.8.1 Questionnaire Survey

A questionnaire was used where the researcher wished to profile the sample in terms of numbers, or to be able to obtain the frequency of beliefs, opinions, processes, behaviours, experiences or predictions. Questionnaires should not only suit the research and the researcher but must also be suitable for the participants (Rahi *et al.,* 2019). Surveys can be administered in various ways, including paper and-pencil, computer-assisted personal interviews (CAPI), computer-assisted telephone interviews, web-based surveys, and surveys using mobile devices. While interviewer-administered surveys provide a high level of accuracy and more complete data, self-administered surveys are less costly and can provide greater confidentiality and improved respondent comfort. Information technology-based approaches can increase accuracy and reduce human error (Green *et al*., 2015).

The questionnaire was fully self-administered by the participants using the survey monkey digital link provided to them. The initial participants in the survey, as part of RDS, where all sent personalised emails with a link to complete the survey.

To ensure that participants did not complete the survey twice and thereby compromise the results, the survey had to be completed within a stipulated time stamp on the survey monkey platform. This link could be opened on any platform that was digitally able, including a mobile phone. This enabled access to participants that were working on remote construction sites. Different survey links were shared with the members of SAICE and CBE. To ensure that participants completed the survey, reminders were automatically set on the digital platform to be sent at specific intervals to the participants.

A reminder to start the survey and to complete the survey was set. Once the survey was completed this was recorded on the survey monkey platform, which included a summary of the number of completed surveys, at a given time.

6.8.1.1 Response rate

A total of 131 questionnaires were completed on the survey monkey digital platform. Upon analysing the completion stats, 114 were considered valid for data analysis. As the link was closed at 131, this was taken as the total sample. Therefore, based on this sample total, the questionnaire had an 87% completion rate. A response rate above 20% is considered acceptable for online questionnaires (Oyewobi, 2014; Morton *et al*., 2012; Evans & Mathu, 2018; Nayak & Narayan, 2019). Based on this the response rate, the quantitative data in this study was acceptable.

6.8.2 Semi – structured interviews

Interviews are among the most employed qualitative data collection methods used in research. They can be conducted individually or in groups and can be semi-structured or structured in nature (Green *et al*., 2015).

Semi-structured interviews allow for the flexibility of qualitative data collection while at the same time providing more standardisation than in naturalistic or unstructured interviews. Interview guides provide a set of questions and prompts to guide the interviewer, but the interviewer is permitted to follow the flow of conversation by asking questions as they occur naturally and following-up with unanticipated questions when interviewees raise topics of particular interest or importance (Green *et al*., 2015; Makofane & Shirindi, 2018). The researcher is perceived as a key instrument in the research process and must be authentic, intuitive, and receptive to the participants' stories (Makofane & Shirindi, 2018).

Due to the complexity of this study, semi-structured interviews were deemed to be best suited for gaining in-depth participation from the participants on the elements under evaluation. This study used semi-structured interviews for the purpose of completing an in-depth exploration of the views, experiences, beliefs, and motivations of leaders in the South African construction industry, specific to diversity and innovation, and their relationship with these elements. Table 6.8 describes the benefits of semi-structured interviews in general, and in a mixed-method research approach as it pertains to the research approach of this study.

Table 6.8: Advantages and Disadvantages of Semi-structured interviews

Advantages		Disadvantages
1.	Enabling open-ended questions to gain independent thoughts of participants.	Semi-structured interviews are time consuming
2.	Providing a platform for probing, open-ended questions on topics that participants might not be candid about if sitting with peers in a focus group.	They are labour intensive, they require much effort in planning, conducting, and analysing the data.
3.	Enabling in-depth one on one interviews with experts and leaders within a discipline.	Require interviewer sophistication and maturity
4.	When examining uncharted territory with unknown but potentially momentous issues, interviewers need maximum latitude to spot useful leads and pursue them.	Conducting them virtually and not face to face can be challenging and often frustrating if not planned properly.
Advantages in mixed- method research approach		
Using open-ended questions and extended probing to address issues that the standardised survey questionnaire cannot.		

Adapted from: Adams (2015)

Generally, semi-structured interviews (SSI) are highly appreciated for their power to engage participants in deep conversation, and their flexibility, and generative nature, hence inspiring new ideas. Additionally, the views are captured in their natural forms, including non-verbal communication. The weaknesses of SSI include data loss, either by use of technology that comes closer to imitating the conditions of face-to-face exchanges; limited examination due to language barrier; loss in translation; little understanding, or inadequate response to the topic. SSIs are not ideal for grouped interviews as they necessitate active listening. However, the current COVID-19 global pandemic urges the need to expand new, and possibly better, ways of carrying out SSI without potential loss of data. Therefore, the contemporary advances in science and technology could introduce innovative methods in essential qualitative research (Kakilla, 2021).

6.8.3 Criteria for adjudicating the quality of research design

According to Valentine (2009), validity and reliability are the most frequently used criteria to measure the quality of a research design at various research stages. Creswell and Creswell (2017) further state that the theory of validity in quantitative research, differs from the theory of validity in qualitative research, although in both approaches the theory is used to check the quality of data, the results, and their interpretation. Validity describes how well an instrument does what it is supposed to do, and reliability describes the consistency with which results are obtained (Andrade, 2018).

Quantitative researchers design their studies to reduce the threats to the internal and external validity of the instrument used (Valentine, 2009). This section provides the steps taken in assessing the quality of the research design for this study.

6.8.3.1 Validity and reliability in quantitative data

Threats to validity can be placed into four broad categories or dimensions: internal validity, external validity, construct validity, and statistical conclusion validity (Valentine, 2009).

Internal Validity

Internal validity is the degree to which an assessed and studied effect among research variables can be held to be due to a causal relationship (Valentine, 2009; Bleijenbergh *et al.*, 2011). c. Such systematic error can arise through selection bias, performance bias, detection bias, and attrition bias (Andrade, 2018).

In this study, internal validity was taken into consideration by focusing on the quality of the results obtained from the questionnaires, and by ensuring that the risk of bias was reduced by distributing the survey by monitoring the number of times a link was shared, via the survey monkey platform.

External Validity

External validity examines whether the findings of a study can be generalised to other contexts. Studies are conducted on samples, and if sampling is random, the sample is representative of the population. So, the results of a study can validly be generalised to the population from which the sample was drawn (Valentine, 2009; Andrade, 2018).

External validity, like internal validity, is based on the researcher's judgment and is not a computed statistic (Andrade, 2018). As discussed in section 6.6.1 of this chapter, the sampling technique that was adopted in this study was non-probability sampling. The limitations of this sampling technique were addressed by adopting a combination of Maximum Variation Sampling (MVS) and Respondent – Driven Sampling (RDS).

Construct and Statistical conclusion validity (Reliability)

Construct validity refers to the extent to which the operational characteristics of interventions and outcome measures used in a study adequately represent the intended abstract categories. Statistical conclusion validity refers to the validity of statistical inferences regarding the strength of the relationship between the presumed cause and the presumed effect (Valentine,

2009). According to Bonnet and Wright (2014), Cronbach's alpha is one of the most widely used measures of reliability in scientific research. It is the most common statistical test to check the internal consistency of a research variable. Cronbach's alpha determines the degree of internal consistency or average correlation of elements in a survey instrument from 0 to 1, the closer to 1, the better the internal consistency of the items in the scale (Tavakol & Dennick, 2011; Bujang *et al.*, 2018; Taber, 2018). As stated in section 6.9.1.1 of this chapter, the Cronbach's alpha construct reliability test was used to test the reliability of the elements under evaluation and the overall score for the questionnaire was 0.830, as shown in Table 6.7.

6.8.3.2 Validity and reliability in qualitative data

Reliability refers to the soundness of the research, particularly in relation to the appropriate methods chosen, and the ways in which those methods were applied and implemented in a qualitative research study (Rose and Johnson, 2020). According to Leung (2015), and Rose and Johnson (2020), there are diverse genera and forms of qualitative research and no consensus for assessing quality and reliability of quantitative data qualitative research work. Various approaches have been suggested, the two leading schools of thoughts being the school which emphasises methodology, and that which stresses the rigour of interpretation of the results (Leung, 2015).

Triangulation

Triangulation involves recognising the multiplicity and simultaneity of cultural frames of reference and providing a plurality of techniques to best ensure accurate description and presentation of a given situation. The idea is that by addressing a phenomenon from several directions, researchers can more clearly and accurately locate that phenomenon. Qualitative codes, themes, and overall analyses can be more coherently justified based on a converging coherence from multiple sources, thus, increasing the validity of the study (Rose & Johnson, 2020).

Critical reflexivity and subjective positionality

Being critically reflexive enables researchers to better interrogate assumptions that are associated with their own subjectivities, particularly those that play out in the research process. Further, many of these subjective positions require interrogation prior to the research formulation or implementation.

Questions of self, politics, intent, motivation, and others are paramount in this process. While reflexivity has long been established as a key component in qualitative research, since the researcher is the research instrument, the validity of the overall study can be strengthened with the thoughtful, insightful articulation of the ways in which researchers' subjective positionalities influence all aspects of the research process, from subject matter to methods to analysis to representation of the findings (Rose & Johnson, 2020).

To improve the validity and quality of the qualitative phase of this study, triangulation was adopted in the thematic data analysis process. Further to this, the researcher adopted critical reflexivity and subjective positionality prior to the research implementation and ensured that during the data collection stage, when conducting the semi-structured interviews, objectivity was harnessed, and the participants were provided with an environment wherein they could express their views freely and openly.

6.9 THE METHODS OF DATA ANALYSIS

Data analysis is a method of applying facts and figures to solve the research problem. It is vital to finding the answers to the research question. Another significant part of the research is the interpretation of the data, which is derived from the analysis of the data and makes inferences and draws conclusions (Ashirwadam, 2014; Kabir, 2016).

This study adopted the convergent parallel mixed method approach which included the collection of both qualitative and quantitative data. Thus, several techniques were used to analyse and evaluate the data, to improve the reliability and validity of the research result.

6.9.1 Quantitative data analysis

The quantitative data in this study was analysed using both descriptive and inferential statistical techniques. The analysis was done using the Statistical Package for the Social Sciences (SPSS 27) software. The data was coded using numerical values to allow for simple analysis on SPSS 27, as shown in Table 6.7 under the inferential statistics techniques. These values were set up in SPSS 27 to enable switching between variable label (participant response) and their value labels (code) to enable the confirmation of participants response and improve the data credibility.

6.9.1.1 Testing validity and reliability

Cronbach's alpha provides a measure of the internal consistency of a test or scale which is expressed as a number between 0 and 1. Internal consistency describes the extent to which all the items in a test measure the same concept or construct. Therefore, it is connected to the inter-relatedness of the items within the test. To ensure the validity of the data, internal consistency should be determined before analysis can be employed for research purposes (Tavakol & Dennick, 2011). According to Bonett and Wright (2014), in reliability testing, current practice would characterise a reliability value of *.65 as unacceptable* and a reliability value of *.85 as excellent.* While Tavakol and Dennick (2011) and Taber (2018) state that the reported acceptable values of alpha, range from 0.70 to 0.95. Tavakol & Dennick (2011) provide the following classification for Cronbach's alpha coefficient range shown in Table 6.9

Table 6.9: Cronbach's alpha coefficient range

Cronbach's alpha coefficient range	Level of Reliability
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

In this study, the Cronbach's alpha test was used to test the reliability of the elements under evaluation. The results show that for leadership and diversity, the levels of importance at organisation level and at industry level were all greater than 0.78, which is significant, as the level ranged between 0.781 and 0.971. Innovation had a Cronbach's alpha of 0.694. Table 6.10 depicts these results.

Table 6.10: Summary of Cronbach's Alpha

#	Construct	Cronbach's alpha	Level of reliability
1.	Leadership	0.781	Acceptable
2.	Diversity	0.818	Good
3.	Innovation	0.694	Acceptable
4.	Importance at industry level	0.886	Good
5.	Importance at organisation level	0.971	Excellent
Overall Cronbach Alpha		**0.830**	**Good**

6.9.1.2 Testing normality of the data

One of the first steps of data analysis is to test the normality of the data which involves making a distributional assumption about the data. If the data is considered truly a sample from some classes of probability distributions, the data cannot simply be summarised compactly based on the approximate distribution. Further proper statistical procedures must be conducted to gain valuable inferences. If the specified distributional assumption about the data is not valid, the analyses based on those assumptions will be invalid and sometimes lead to incorrect conclusions (Peng, 2004; Ghasemi & Zahediasl, 2012; Mishra *et al*., 2019).

In this study, the normality test was done to examine if the data set was well modelled by records and to compute the likelihood for a random variable underlying the data set to be normally distributed. Since the data in this study exceeded 100, it was compared with known distribution by means of the Kolmogorov-Smirnov test, which was also used to confirm if the data had the same distribution, and to ensure that only the elements used in this research were assessed. The results from this test showed a significant value of less than 0.05 which indicated that the variables were not normally distributed. Non-parametric methods were then used for further testing with the Spearman rank correlation coefficient test which are presented in Chapter 7 section 7.2.2. Table 6.11 shows the results of the Kolmogorov-Smirnov normality test.

Table 6.11: Kolmogorov-Smirnov normality test table

	Kolmogorov-Smirnov[a]			Shapiro Wilk		
Element	**Statistic**	**Df**	**Sig.**	**Statistic**	**Df**	**Sig.**
Leadership	.118	131	<.001	.959	131	<.001
Diversity	.126	131	<.001	.951	131	<.001
Innovation	.141	131	<.001	.959	131	<.001

6.9.1.3 Descriptive statistics techniques

There are three major types of descriptive statistics: *Measures of frequency* (frequency, percent), *measures of central tendency* (mean, median and mode), and *measures of dispersion or variation* (variance, standard deviation, standard error, quartile, interquartile range, percentile, range, and coefficient of variation) provide simple summaries about the sample and the measures. A measure of frequency is usually used for categorical data, while others are used for quantitative data (Mishra *et al*., 2019).

In this study, measures of frequency and measures of central tendency were used to count the number of times each of the variables occurred, such as the number of females and males within the sample. The measures of central tendency were used to determine the representative value of the data set.

6.9.1.4 Inferential statistics

The coding Table 6.12 shows the transformation of the data from linguistic to numerical to enable analysis on the SPSS 27 software.

Table 6.12: Codes used in the analysis

Level of Agreement		Level of importance		Age	
Participants Selection	**Code**	**Participants Selection**	**Code**	**Participants Selection**	**Code**
Strongly Agree	2	Not important	-2	25-34	1
Agree	1	Somewhat important	-1	35-44	2
Neutral	0	Neutral	0	45-54	3
Disagree	-1	Important	1	55-64	4
Strongly Disagree	-2	Very important	2	65+	5
				Blank	6

Spearman rank correlation coefficient test

Correlation is a statistical method used to assess a possible linear association between two continuous variables. It is used to both calculate and to interpret. The Spearman's rank correlation coefficient is the nonparametric version of the Pearson correlation coefficient that measures the degree of association between two variables based on their ranks (Mukaka, 2012; Akoglu, 2018). The data in this study was found to be abnormally distributed.

Therefore, non-parametric methods were used for further testing. The Spearman's rank correlation coefficient formula is shown below:

$$\rho = 1 - \frac{6\sum d_i^2}{n(n^2-1)}$$

Chi square test of independence

The Chi-square test of independence (also known as the Pearson Chi-square test, or simply the Chi-square) is a non-parametric tool designed to analyse group differences when the dependent variable is measured at a nominal level, it is robust with respect to the distribution of the data and is one of the most useful statistics for testing hypotheses when the variables are nominal (Preacher, 2001; McHugh, 2013). For this study, the Chi-square test of independence was completed to determine whether there was an association between categorical variables, and the results showed that there was a significant association at the significant level of (α) = 0.05. The relative standard commonly used in research is $\alpha > 0.05$. The α value is the probability that the deviation of the observed from the expected is due to chance alone (no other forces acting). In this case, using $\alpha > 0.05$, one would expect any deviation to be due to chance alone 5% of the time or less (Onchiri, 2013). This significant level would therefore be deemed acceptable for this construction industry research. The chi square test of independence formula is shown below:

$$\chi^2 = \sum_i \sum_j \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

6.9.2 Qualitative data analysis

According to Smith and Firth (2011), qualitative data analysis is based on a common set of principles. These principles are transcribing the interviews, immersing oneself within the data to gain detailed insights into the phenomena being explored, developing a data coding system, and linking codes or units of data to form overarching categories/ themes which may lead to the development of theory. Qualitative data analysis is the tool employed by researchers to make sense of the vast quantities of data, so that the data can be presented in a systematic

manner. There are multiple different approaches to qualitative analyses ranging from content, thematic, grounded theory to narrative, conversation, and discourse (Archer, 2018).

6.9.2.1 Thematic Analysis

Thematic analysis is a method for analysing qualitative data that entails searching across a data set to identify, analyse, and report repeated patterns. This type of analysis also involves interpretation in the processes of selecting codes and constructing themes (Braun & Clarke, 2006; Terry *et al*., 2017). Since Braun and Clarke (2006) first developed the thematic analysis model it has been a widely used method of qualitative data analysis. Thematic analysis can be conducted within the social constructivist paradigm. It is distinguished by its flexibility, which enables it to be applied to within a wide range of theoretical and epistemological frameworks, and to a wide range of study questions, designs, and sample sizes (Braun and Clarke, 2006; Terry *et al*., 2017; Kiger & Vapio, 2020).

6.9.2.2 Inductive and Deductive

In inductive thematic analysis, little or no predetermined theory, structure, or framework is used to analyse data; instead, the actual data are used to derive the structure of analysis. In this approach, the themes are strongly linked to the data since they emerge from it. Inductive thematic analysis is comprehensive and therefore time-consuming and is particularly useful when little or nothing is known about the event or topic under study. Conversely, in deductive thematic analysis, predefined theories and/or theoretical frameworks will inform theme development. Consequently, themes often focus more on a particular aspect of the data set or a specific question of interest (Braun and Clarke, 2006; Terry *et al*., 2017; Kiger and Varpio, 2020).

6.9.2.3 Justification for Inductive Thematic Analysis

The backbone of the qualitative data analysis of this study was the inductive thematic analysis method. Due to the limited literature theory on the constructs under evaluation, the inductive method was deemed most suited for analysis in this study. The data was analysed using NVivo 12 software. Table 6.13 depicts the phases of thematic analysis used in this study as developed by Braun and Clarke (2006). Thematic analysis can be a constructionist method, which examines the ways in which events, realities, meanings and experiences relate to certain constructs. This study's philosophical approach is a social constructivist approach and, therefore, thematic analysis was deemed the best suited approach ((Braun and Clarke, 2006; Terry *et al*., 2017; Kiger & Varpio, 2020).

While Table 6.13 lists the advantages of thematic analysis. However, there are some disadvantages to it. The disadvantages are that the flexibility can make developing specific guidelines for higher-phase analysis difficult, and the limited interpretive power of analysis (Braun & Clarke, 2006).

Table 6.13: The Phases of the thematic analysis

Phase		Description of the process
1.	Familiarising yourself with your data	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2.	Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3.	Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4.	Reviewing themes	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5.	Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6.	Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Source: Braun & Clarke (2006)

Table 6.14 shows the advantages of thematic analysis.

Table 6.14: The Advantages and Disadvantages of thematic analysis

#	Advantage
1.	Flexibility
2.	Relatively easy and quick method to learn and do.
3.	Accessible to researchers with little or no experience of qualitative research.
4.	Results are generally accessible to educated public.
5.	Useful method for working within a participatory research paradigm, with participants as collaborators.
6.	Can usefully summarise key features of a large body of data, and/or offer a 'thick description' of the data set.
7.	Can highlight similarities and differences across the data set.
8.	Can generate unanticipated insights.
9.	Allows for social as well as psychological interpretations of data
10.	Can be useful for producing qualitative analyses suited to informing policy development

Source: Braun & Clarke (2006)

6.10 THE INSTRUMENTS OF DATA COLLECTION

6.10.1 Quantitative Phase

6.10.1.1 Questionnaire

Questionnaire design and measurement techniques (Refer to Appendix B). A 5-point Likert scale was used in the questionnaire. A five-point Likert scaling is a psychometric concept commonly used in survey research that uses guided questionnaires that require responses in five-point scales from the subjects or respondents of interest. This technique is commonly used in many fields of research to measure attitudes and opinions with a greater degree of nuance than a simple yes/no question. Likert scale responses are used to measure a variety of sentiments, from agreement, to satisfaction, frequency, and desirability from large samples of people (Chyung *et al.,* 2018; Pimentel, 2019; Lionello *et al.,* 2021).

The questionnaire was divided into 3 sections as follows:

1. Background and General Demographics Section: The introduction and background to the Ph.D. study and survey, provided descriptions of the key components of the questionnaire to ensure that the participants understood what was meant by the concepts to mitigate the risk of misinterpretation. The general demographic information of the participants was collected through questions about age, gender, race, geographic area, type of organisation, education, employment level, and number of years in the organisation. Respondents were not asked to divulge their names as the questionnaires were completed anonymously, Anonymity assisted in managing any bias.
2. Section 1: The technical section was split under the headings of the three elements of leadership, diversity and inclusion, and innovation. This section consisted of closed-ended statements and the participants were required to rank the statements related to the constructs on a level of agreement five-point Likert scale, from strongly disagree to strongly agree.
3. Section 2: The participants were asked to rank the level of importance of concepts related to the concepts on a five-point Likert scale, from not important to very important.

Pilot Survey (pre -testing the questionnaire)

According to Rahi *et al.* (2019), a pilot survey must be conducted prior to actual data collection for the purpose of pre-testing the questionnaire. The pre-test serves to validate the instrument

and ensure that the questionnaire is free from errors and ambiguities. In this study, a pilot survey was conducted to test the workability of the digital platform, resolve errors, address any other challenges that could possibly occur, and check the comprehensibility of the questionnaire. As with the final survey, the pilot survey was administered using the survey monkey platform and structure.

The layout of the pilot survey was the same as that of the final questionnaire survey, and the details are discussed in the previous section 6.10.1.1.

6.10.2 Qualitative Phase

6.10.2.1 Semi -structured interview questions

Interview guide design and measurement techniques (Refer to Appendix C).

The qualitative data collection instrument for this study was a semi-structured interview guide. Due to Covid-19 face-to-face interviews were not possible and the interviews were conducted using the Microsoft Teams platform. The video facility was used to improve participant-researcher interaction and enable the researcher to effectively moderate the interviews.

The interview questions were structured to evaluate the leaders' views on the relationship between the elements, and their interaction as leaders with each of the elements. The leaders' role in managing the relationships and interactions was a key output of the interviews.

The interview guide was divided into two sections as follows:

- Section 1: Was related to the demographic information of the participants, such as age, gender, and race, role in the organisation. For anonymity the participants' personal information, such as names, was not requested.
- Section 2: Consisted of 20 questions, with the first question positioned to evaluate the participants' level of comfort in discussing the concepts of leadership, diversity, inclusion, and innovation, using a scale of 1-10 where 1=10% and 10 = 100%. The rest of the questions were open-ended, and each participant was given the flexibility to answer the questions freely and openly, and to skip and revert to questions later when required.

6.11 ETHICAL CONSIDERATIONS

Before an interview takes place, participants should be informed about the study details and given assurance about ethical principles, such as anonymity and confidentiality. This gives

participants some idea of what to expect from the interview, increases the likelihood of honesty, and is also a fundamental aspect of the informed consent process (Gill *et al.*, 2008). Ethical foundations considered in conducting and executing this research included ensuring that all participants were well informed about the purpose of the research and the nature of the data and information required from them. Before participating in the study, participants were given an opportunity to ask any clarification questions about their participation. The researcher ensured that participants' details remained confidential and protected any proprietary information throughout the study. The participants were permitted to accept or reject participation or to withdraw their participation without providing a reason at any time, including during the semi-structured interviews as per the consent form (Refer to Appendix A). Furthermore, the study received the approval of the Ethics in Research Committee of the Engineering and the Built Environment Faculty at the University of Cape Town on 26 February 2021 before data collection commenced (Refer to Appendix D).

6.12 SUMMARY OF THE CHAPTER

This chapter discussed and presented the research philosophy, research approach, instrument of data collection, and methods of data analysis adopted in the study. The chapter acknowledged that the study is primarily inductive and abductive, with an interpretivist paradigm, supported by the social constructivism philosophy which is suitable for addressing the complexities of this study. This approach was further complemented with the convergent parallel mixed method approach of both quantitative and qualitative data collection methods, carried out in parallel phases to ensure completeness of data collection. The main data collection instrument for this study was an in-depth semi-structured interview complimented by a digital questionnaire survey, which was analysed using both thematic and statistical analysis using NVivo 12 and SPSS 27 software, respectively. The next chapter details the quantitative data analysis and findings.

CHAPTER SEVEN:
QUANTITATIVE DATA ANALYSIS AND RESULTS

7.1 INTRODUCTION

This chapter provides the descriptive analysis and findings of the digital questionnaire, which was administered on survey monkey (Please see Appendix B). The methods of data collection and analysis have been discussed in Chapter 6, section 6.9. The main research question investigated by the questionnaire was, how does leadership drive, influence and manage the relationship between diversity and innovation to advance organisational performance in the South African construction industry?

The purpose of the questionnaire was to:

1. Evaluate the views and perceptions of the South African construction industry's workforce on the relationship between leadership, diversity, inclusion, and innovation.
2. Determine the level of importance that leaders within the construction industry place on diversity, inclusion and innovation.
3. Assess the relationship between leadership's commitment to diversity, inclusion and innovation on the industry's ability to provide inclusive innovative solutions
4. Determine whether the construction industry has strategies and policies to drive and implement, diversity, inclusion and innovation.
5. Rate the level of importance of each of the elements under investigation, namely, leadership, diversity, inclusion and innovation at organisational level within the South African construction industry.
6. Rate the level of importance of these elements at an industry level. The following sections in this chapter provide the summaries of the responses to the constructs under investigation.

7.2 RELIABILITY OF THE QUESTIONNAIRE

7.2.1 Cronbach's Alpha construct reliability test

As discussed in Chapter 6, section 6.9.1.1 the questionnaire was tested for reliability using the construct reliability test (Cronbach's alpha). The overall Cronbach's alpha for this study was **0.830**. According to Tavakol and Dennick (2011), Bonett and Wright (2014) and Taber (2018) this Cronbach's Alpha value is good.

The constructs that were tested in this study were, leadership, diversity, innovation, the level of importance at organisation level and the level of importance at industry level. The detail of this was presented in Table 6.6 under section 6.9.1.1.

7.2.2 Spearman rank correlation coefficient test

In this study the Kolmogorov-Smirnov test was used to compare the data with known distribution and to confirm if the data had the same distribution. The data was found to be abnormally distributed and a Spearman rank correlation coefficient test was conducted for further testing. Table 7.1 shows the correlation between the constructs.

Table 7.1: Spearman rank correlation coefficient test results

Construct	Leadership	Diversity	Innovation	Level of Importance in Industry	Importance at Organisation level
Leadership	1				
Diversity	.332**	1			
Innovation	.265**	.575**	1		
Importance at Industry level	.455**	.551**	.560**	1	
Importance at Organisation level	.421**	.360**	.306**	.642**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Based on correlation results, leadership has a significant positive correlation to diversity (r=0.333) and a positive correlation to innovation (r=0.265). Diversity has a positive correlation to innovation (r=0.575) and to importance at industry level (r=0.551) and at organisational level r=0.360). Therefore, these results indicate that there is a significant correlation between diversity, leadership, and innovation.

7.3 DEMOGRAPHIC INFORMATION OF THE PARTICIPANTS

The background section of the questionnaire collected the demographic information of the participants. Table 7.2 indicates that the majority (56.1%) of participants were from Gauteng, 22.9% were from the Western Cape. KwaZulu Natal had 6.1% participants and the East Cape representation was 3.1%. Participants from Mpumalanga amounted to 2.3%. The Free State and Limpopo had the lowest (0.8%) participants.

Table 7.2: General demographics of participants

Age	N	%	Gender	N	%	Race	N	%	Province	N	%
25-34	45	39.5	Male	59	51.8	Black (African)	63	58.9	Gauteng	64	56.1
35-44	36	31.6	Female	55	48.2	White	33	30.8	Western Cape	26	22.8
45-54	18	15.8				Coloured	4	3.7	Eastern Cape	4	3.5
55-64	11	9.6				Indian	4	3.7	KwaZulu – Natal	6	5.3
65+	4	3.5				Prefer not to say	3	2.8	Free State	1	0.9
									Limpopo	1	0.9
									Mpumalanga	3	2.6
									Other	9	7.9
Total	114	100		114	100		107	100		114	100

Where N= Frequency (Number of participants responses)

Table 7.3 shows the primary service of organisation, job level and number of years in the industry.

Table 7.3: Organisation, job level and number of years in industry

Primary Service of Organisation	N	%	Level of Employment	N	%	Number of years in Organisation	N	%
Consulting Engineering	50	44.2	Graduate Student	0	0	0-5 Years	62	47.3
Project Management	14	12.4	Entry Level Professional	17	14.9	5- 10 Years	40	30.5
Building Contractor	3	2.7	Lower Management	17	14.9	10-15 Years	15	11.5
Quantity Surveying	2	1.8	Middle Management	38	28.1	More than 15 Years	14	10.7
Architectural Services	5	4.4	Senior Management	19	16.7			
Town Planning	1	0.9	Executive Management	17	14.9			
Academic institution	8	7.1	CEO	9	7.9			
Other	30	26.5	Board Level	3	2.6			
Total	113	100		114	100		114	100

Where N= Frequency (Number of participants responses)

Table 7.3 indicates that the majority (28.1%) of the participants were in middle management and 16.7% of the participants were in senior management. The participants at entry level, lower management and executive management were equal in their participation at 14.9%. CEO participation was low (7.9%), and board level participation was the lowest (2.6%).

In terms of the primary service of organisations, the sample included organisations from most of the disciplines in the South African construction industry. Table 7.3 shows that most of the participants work in consulting engineering (44.2%) followed by Project Management at 12.4%. Academic institutions were represented by 7.1% of the participants, and architectural services by 4.4%. There were few (2.7%) participants from building contractors, which could be attributed to the lack of construction site work due to the Covid-19 lockdown. There was a low (1.8%) representation from quantity surveying organisations. Participants from the town planning organisation were the lowest (0.9%).

Table 7.3 depicts that 30 (26.3%) of participants selected other, which includes organisations such as property development, property management, facilities management, civil contractors and government departments. Therefore, these demographic findings show that the participants were representative of the broader construction industry.

7.3.1 Diversity of participants

In this study, the demographic information of the participants was important for evaluating the diversity of the participants in terms of the gender and race factors. These factors and the participants' number of years within the industry, as well as their level within their organisations, were of particular interest in answering the research question.

From Table 7.2 it is evident that there was a significant representation of female participants at 48.2% though this was still less than the males at almost 52% (51,8%). There is also a strong representation of Black and White participants at 58.9% and 30.8%% respectively. Coloured and Indian participation was equal and lower at 3.7%, whereas 2.8% of the participants chose not to provide this information.

Figure 7.1 shows the gender representation at the various job levels in organisations. The data shows a higher percentage of females (60.0%) at entry level in comparison to males (40.0%), and a higher percentage (52.0%) of males at senior levels in comparison to females (47.6%). There is a majority (82.0%) male representation at CEO level and 100% male representation at board level.

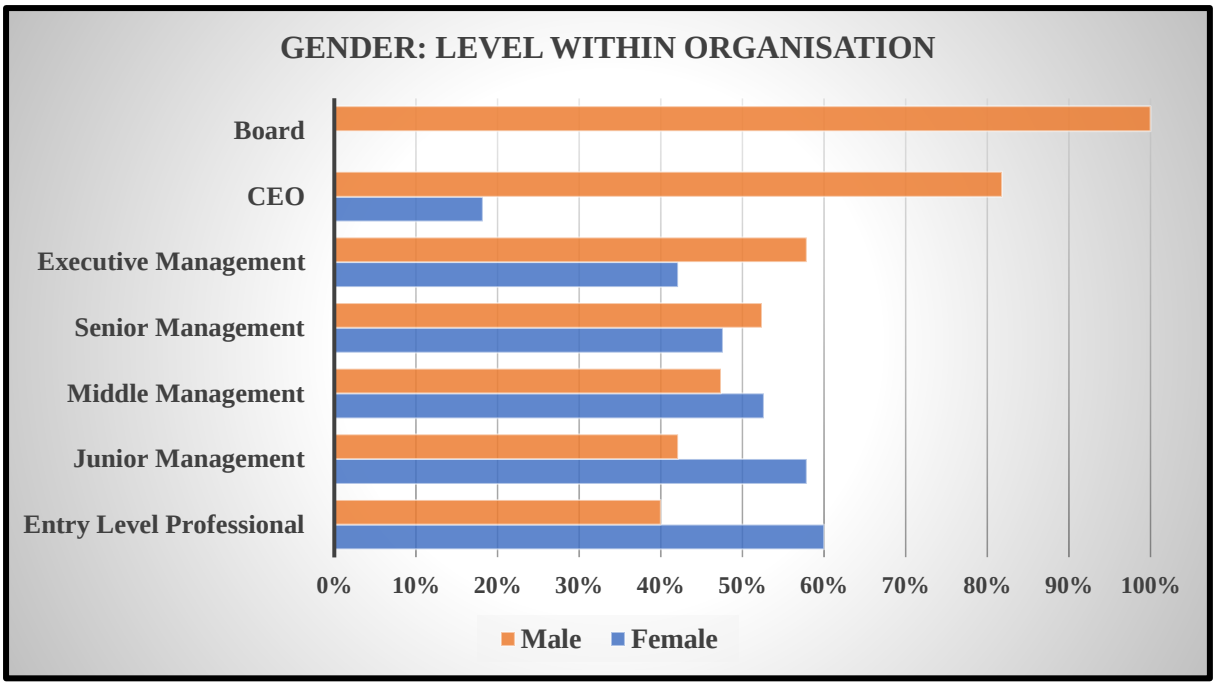


Figure 7.1: Gender Representation at Job Levels within Organisations

Figure 7.2 shows that there were more Black participants at all the levels, with the exception of the board level where the majority (67.0%) of the participants were White. There were fewer Coloured and Indian participants at all levels, though at lower entry level the numbers were above 10% (11.0%) for both.

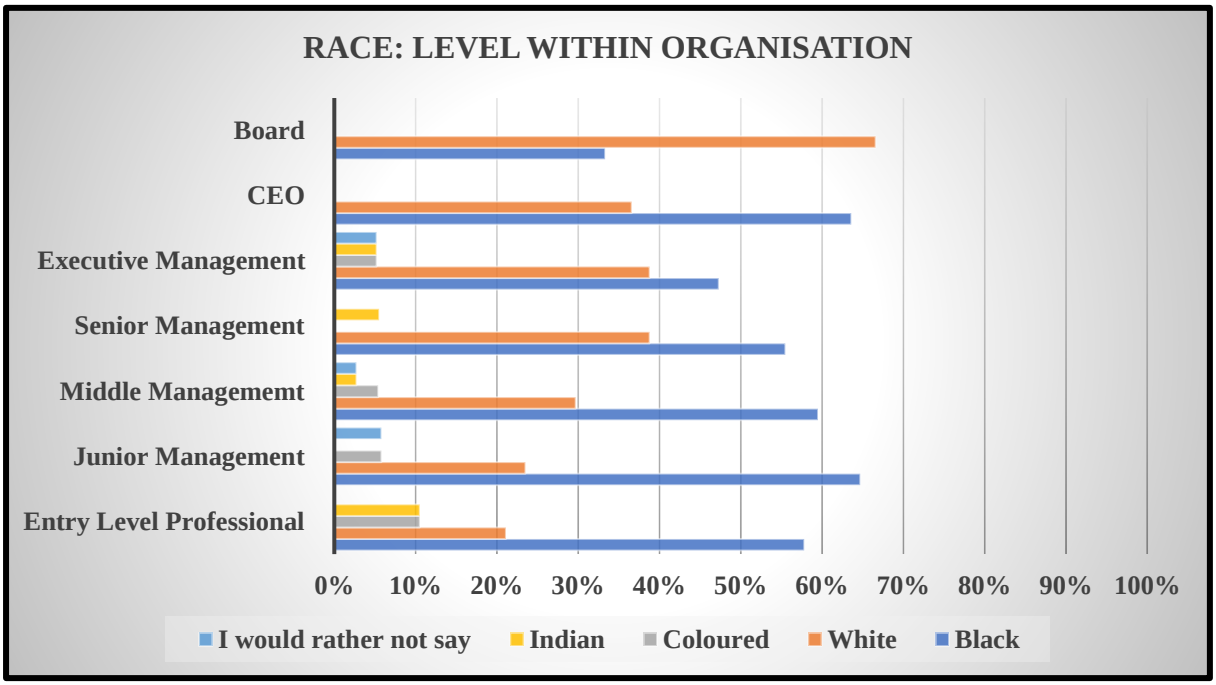


Figure 7.2: Race Distribution at Level within Organisation

When considering the demographic information of the participants in this study, it is also of interest to understand the number of years in the industry relative to gender and race. Table 7.4 depicts that there are more female participants (63.0%) than male participants (37.0%) with 0-5 years in the industry. The findings show that there are more male participants (64.3%) with more than 15 years in the industry than female participants (35.7%). In terms of race, there are more Black participants (67.2%) with 0-5 years in comparison to White participants (19.0%), Indian participants (7.0%) and Coloured (3.4%). There were more white participants (77.0%) with more than 15 years in the industry than black participants (15.3%). There were no Coloured or Indian participants with more than 15 years in the industry.

Table 7.4: Gender and Race in relation to number of years in the industry

Number of Years	Gender		Race				
	Male	Female	Black (African)	White	Coloured	Indian	I Would rather not provide
0-5 Years	37.0%	63.0%	67.2%	19.0%	3.4%	7.0.%	3.4%
5-10 Years	65.0%	35.0%	57.8%	34.2%	8.0%	0.0%	0.0%
10-15 Years	66.7%	33.3%	53.0%	33.0%	7.0%	7.0%	0.0%
+15 years	64.3%	35.7%	15.3%	77.0%	0.0%	0.0%	7.7%

7.4 RESULTS OF THE QUESTIONNAIRE

In section one of the questionnaire the participants were asked to rank various statements for each of the research constructs, as shown in Table 7.1 using a strongly disagree to strongly agree Likert scale. For analysis purposes strongly agree = 2, agree = 1, neutral = 0, disagree = -1, and strongly disagree = -2, as shown in detail in Table 6.9 and 7.5. The results were analysed through descriptive analysis, and these are shown in Tables 7.6 to Table 7.10 which includes the mean scores and ranking of the various statements. For purposes of data interpretation, mean scores 0.0 to 0.67 = Neutral, mean scores greater than 0.67 to 1.34 = Agree and mean scores greater than 1.34 to 2.0 = Strongly agree, as per Table 7.5.

Table 7.5: Descriptive legend of section one questionnaire results tables

Ranking Scale	Coded as	Interpretation
Neutral	0	0.0 to 0.67 mean score
Agree	1	>0.67 to 1.34 mean score
Strongly Agree	2	>1.34 to 2.0 mean score

7.4.1 Importance of this topic and research study

The first statement (Q009) in this section evaluated the importance of this topic in the South African construction industry. The purpose of this question was to understand the level at which the participants believed issues of leadership, diversity and innovation are important to be researched and studied. Table 7.6. depicts that the participants strongly agreed, with a mean score of 1.61, that this is an important topic and research study.

Table 7.6: The importance of this research study

Diversity					
Q#	**Statement**	**Mean**	**Std**	**Score**	**Interpretation**
009	This is an important topic and research study.	1,61	0,673	1.61	Strongly Agree

7.4.2 Diversity in the South African construction industry

To understand the perceptions and experiences of the construction industry workforce in relation to diversity, using a Likert scale, participants were presented with 17 statements about diversity and requested to rate the level at which they strongly agreed or strongly disagreed with the statements. The findings in Table 7.7 show that the mean scores ranged from 0.62 to 1.55, deprived of any negative scores, indicating that the participants responses oscillated from neutral to strongly agree, with no participants disagreeing or strongly disagreeing with the statements. The participants agreed (1.29) that this was the first time they were participating in a research study on diversity in the construction industry. This finding supports the limitations of this study in relation to the adequate availability of South African literature on similar studies.

Table 7.7 shows that the participants strongly agreed (1.42) that diversity such as age, ethnicity and culture, gender, race, and capabilities are critical for driving organisational success in the industry. Participants strongly agreed (1.43) that workforce diversity management should be a strategic drive for leadership in the construction industry. With a mean score of 1.51 the participants strongly agreed that diversity is important to improve organisational competitiveness and innovation capabilities. This statement was ranked the second highest important (2), indicating that the participants recognised diversity as key for organisational competitiveness and innovation in the South African construction industry.

Table 7.7: Diversity in the South African construction industry

Diversity						
Q#	**Statement**	**Mean**	**Std**	**Score**	**Rank**	**Interpretation**
018	This is the first time I am participating in a research study where diversity in the construction industry is the topic.	1.29	0,99	1.29	8	Agree
019	Diversity such as age, ethnicity and culture, gender, race, and capabilities are critical for driving the organisational success in the industry.	1.42	0.75	1.42	5	Strongly Agree
020	Diversity is important to improve organisational competitiveness and innovation capabilities.	1.51	0.69	1.51	2	Strongly Agree
021	My organisation has recruitment strategies and policies to drive, advance and address diversity.	0.55	1.02	0.55	14	Neutral
022	The South African construction industry is not seen to be promoting diversity as it continues to predominately attract, employ, and promote males and in particular white males.	0.75	1.14	0.75	12	Agree
023	In the South African construction industry diversity and diversity management are not regarded as important issues that require focus.	0.61	1.03	0.61	13	Neutral
024	Due to the lack of diversity, previously disadvantaged groups and in particular black females are discouraged from considering careers in the construction industry.	0.52	1.10	0.52	15	Neutral
025	Gender diversity is an important issue that needs focus in the construction industry to ensure that the industry has a diverse workforce to better address the challenges it faces.	1.47	0.62	1.47	3	Strongly Agree
026	A diverse construction organisation workforce brings new thinking approaches to the workplace.	1.55	0.65	1.55	1	Strongly Agree
027	Diversity increases and strengthens the interaction between different types of construction disciplines and levels of expertise.	1.28	0.77	1.28	9	Agree
028	Workforce diversity management should be a strategic drive for leadership in the construction industry.	1.43	0.66	1.43	4	Strongly Agree
029	Despite equal opportunity laws in South Africa, women and other historically discriminated-against groups continue to remain disadvantaged and disempowered in the construction industry organisations relative to their white male counterparts.	1.12	0.99	1.12	11	Agree
030	The South African construction industry requires a more diverse workforce to address its economic growth and skills shortage challenges.	1.37	0.67	1.37	7	Strongly Agree
032	Diversity is a difficult and uncomfortable conversation to have.	0.30	0.62	0.30	17	Neutral
033	The South African construction industry is still a male dominated; particularly white male dominated industry.	1.21	1.28	1.21	10	Agree
034	My organisation has a diversity policy.	0.38	0.91	0.38	16	Neutral
035	Diversity should be a priority agenda in the South African construction industry.	1.39	1.21	1.39	6	Strongly Agree

Table 7.7 demonstrates that the participants were neutral, with a mean score of 0.55, about their organisations having recruitment strategies and policies to drive and advance diversity, this statement was also ranked one of the lowest at 14th out of the 17. This finding shows that there could be a lack of awareness and uncertainty on what constitutes diversity recruitment strategies and policies within the construction industry, and, therefore, it is not regarded as important. In support of this finding, the statement *"my organisation has a diversity policy"* was ranked the second lowest at 16th with a mean score of 0.38 displaying neutrality. The statement on diversity being a difficult and uncomfortable conversation to have, was ranked the lowest at 17th and neutral (0.30), which implies that there is no consensus on diversity being a difficult topic to discuss in the South African construction industry. This finding indicates that conversations about diversity are not regarded as important in the industry.

Table 7.7 further shows that the participants agreed (0.75) that the South African construction industry does not promote diversity as it continues to attract, employ, and promote males and in particular white males. This statement was ranked low at 12th which shows that promoting diversity in the construction industry is possibly not regarded as important. This finding further implies that there is a lack of diversity in the South African construction industry. This is supported by the participants consensus and agreement (1.21) that the South African construction industry is still a white male dominated industry. Interestingly, the participants strongly agreed (1.47) and ranked high, at 3rd place, that gender diversity is an important issue that requires focus in the construction industry to ensure that the industry has a diverse workforce to better address the challenges it faces. This finding indicates that even though promoting diversity is not ranked important, there is a recognition that gender diversity is important to the construction industry. These results could further imply that within the South African industry, diversity specific to gender is seen to be more important than inclusivity and diversity in the broader sense. This indicates a willingness to recruit more females into the industry. However, age diversity and other forms of diversity such as race, are not perceived to be important.

Table 7.7 shows that there was agreement (1.12) that despite equal opportunity laws in South Africa, women and other historically discriminated-against groups continue to remain disadvantaged and disempowered in the construction industry organisations relative to their white male counterparts. This finding further supports the participants agreement that the industry continues to attract, retain, and promote predominately white males.

7.4.3 Leadership in the South African construction industry

This section details all the results on the leadership construct, participants were presented with eight statements about leadership and requested to rate the level at which they strongly agreed or strongly disagreed with the statements, these results are depicted in Table 7.8.

Table 7.8: Leadership in the South African construction industry

Leadership						
Q#	**Statement**	**Mean**	**Std**	**Score**	**Rank**	**Interpretation**
010	Diversity Management must be a leadership initiative, owned and driven by Senior Management, namely the CEO and EXCO.	1.40	0.89	1.40	2	Strongly Agree
011	The role of leadership in driving diversity in construction organisations is key to improving diversity in the industry.	1.47	0.733	1.47	1	Strongly Agree
012	Leadership's management and integration of diversity through workforce diversity management enhances innovation in construction organisations.	1.37	0.758	1.37	4	Strongly Agree
013	Leadership is a key catalyst for driving innovation through effectively managing diversity in construction organisations.	1.38	0.791	1.38	3	Strongly Agree
014	In my organisation, diversity management is a key leadership strategic agenda	0.40	1.195	0.40	7	Neutral
015	My organisation has innovation as a strategic leadership focus.	0.52	1.131	0.52	6	Neutral
016	The leadership within your organisation drives initiatives that foster diversity and innovation.	0.39	1.141	0.39	8	Neutral
017	Leadership should drive the management of the relationship between diversity and innovation in the construction industry.	1.30	0.841	1.30	5	Agree

Table 7.8 shows that the participants strongly agreed, with a mean score of 1.40, that diversity management must be a leadership initiative, owned and driven by the CEO and EXCO. This statement was ranked the second most important. With a mean score of 1.47, the participants strongly agreed that the role of leadership in driving diversity is key to improving construction industry diversity and ranked this statement as the most important. These results indicate that leaders in the South African construction industry have a significant role to play in advancing, managing, and improving diversity in the industry. The participants strongly agreed (1.37) that leadership management and integration of diversity through workforce diversity management enhances innovation in construction organisations and ranked it 4th out of 8. Table 7.8 further shows that the participants strongly agreed (1.38) that leadership is a key catalyst for driving innovation through effective diversity management.

These findings suggest that effective workforce diversity management enhances innovation in the construction industry and that this needs to be a leadership focus. As shown in Table 7.8, the participants were neutral (0.40) about whether their organisations had diversity management as a strategic leadership focus. This statement was ranked 7th out of the 8 statements. This result seems aligned with the findings on diversity strategies and policies under the diversity construct, therefore suggesting that there is a relationship between strategic leadership focus on diversity management and the policies guiding these in the industry. The participants were also neutral (0.52) about their organisations having innovation as a strategic leadership focus, this statement was ranked 6th. These findings indicate that, though these issues are regarded as important in the construction industry, they are not strategically prioritised.

According to Table 7.8, there was neutrality (0.39) among the participants that leadership within their organisations drove initiatives to foster diversity and innovation, whereas they agreed (1.30) that leadership in the South African construction industry should drive the management of the relationship between diversity and innovation in the industry. These findings seem to emphasise that though there is agreement about the role of leadership in driving and managing issues of diversity and innovation, there is no evidence that this is actually being practiced by the leaders in the industry.

7.4.4 Innovation in the South African construction industry

This section details all the results on the innovation construct, participants were presented with five statements about leadership and requested to rate the level at which they strongly agreed or strongly disagreed with the statements, these results are depicted in Table 7.9.

The results show that the participants strongly agreed (1.64) that *"construction industry organisations need to innovate in response to changing customer demands and lifestyles, and to capitalise on opportunities offered by technology and changing marketplaces, structures and dynamics"* ranking this statement the most important. The participant strongly agreed (1. 56) that innovation is key to the growth and evolution of the South African construction industry. Table 7.9 further depicts that the participants strongly agreed (1.58) and ranked 2nd that *"workplace innovation can enhance the profitability of construction industry organisations in South Africa*." The findings show that the participants were neutral (0.64) that the South African construction industry is shrinking and struggling to cope under economic pressure due to lack of diversity and ranked this statement the second lowest.

This shows that there is no consensus among the participants about the construction industry's performance in relation to the lack of innovation in the industry, and that there is possibly no definite link between the industry's shrinkage and innovation. This finding indicates that there could be reasons other than innovation for the industry's shrinkage that were not explored in this statement.

Table 7.9: Innovation in the South African construction industry

Innovation						
Q#	**Statement**	**Mean**	**Std**	**Score**	**Rank**	**Interpretation**
036	Construction industry organisations need to innovate in response to changing customer demands and lifestyles, and to capitalise on opportunities offered by technology and changing marketplaces, structures, and dynamics.	1.64	0.571	1.64	1	Strongly Agree
037	Innovation is an integral key element to the growth and evolution of the South African construction industry.	1.56	0.584	1.56	3	Strongly Agree
038	Workplace innovation can enhance the profitability of construction industry organisations in South Africa.	1.58	0.583	1.58	2	Strongly Agree
039	The construction industry in South Africa is shrinking and struggling to cope under economic pressure because of the lack of innovation in the industry.	0.64	1.098	0.64	4	Agree
040	The South African Construction Industry is not mature enough to embrace innovation because of the low levels of diversity and limited focus on diversity and innovation management initiatives.	0.49	1.072	0.49	5	Neutral

Table 7.9 shows that the participants were neutral (0.49) about the South African construction industry not being mature enough to embrace innovation due to the low levels of diversity and limited focus on diversity and innovation management initiatives, ranking this the least important. This finding indicates a lack of awareness and information about the industry's innovation maturity levels and diversity and innovation management initiatives. Furthermore, the finding could be linked to the previously reported results on the industry diversity and innovation strategies and policies. The need for the organisations in the construction industry to innovate in response to changes in market and customer demands was ranked the most important. This indicates that there is a recognition of the importance of innovation in retaining customers in the industry, and for taking up technological opportunities within the industry. However, what the findings do not show, is evidence of the practical implementation.

7.4.5 The relationship between the three constructs in the South African construction industry

This section provides the results of the questionnaire on the relationship between diversity, leadership, and innovation in the South African construction industry. The participants were presented with four statements about the relationship between diversity, leadership and innovation and were requested to rate the level at which they strongly agreed or strongly disagreed with the statements. The detail of these results is shown in Table 7.10. From the results it is evident that there was consensus among the participants on these statements, as the mean scores were all above 1.0, therefore the participants agreed with all four statements.

Table 7.10: The relationship between diversity, leadership and innovation

	The relationship between the three constructs					
Q#	**Statement**	**Mean**	**Std**	**Score**	**Rank**	**Interpretation**
031	The relationship between leadership, diversity and innovation and its impact on the South African construction industry's performance and success is an important topic that needs further research and analysis.	1.45	0.615	1.45	1	Strongly Agree
041	This is the first time I am participating in a research study on the relationship between leadership, diversity and innovation in the construction industry.	1.23	0.973	1.23	2	Agree
042	There is a direct relationship between workforce diversity management and the ability of the workforce to be innovative.	1.08	0.81	1.08	3	Agree
043	There is a direct relationship between leadership's focus on diversity management and the rate of innovation in organisations.	1.04	0.951	1.04	4	Agree

Table 7.10 shows that the participants ranked as most important, and strongly agreed (1.45) on the need for research on the impact of the relationship between leadership, diversity and innovation on the South African construction industry's performance and success. This finding suggests that the industry is possibly void of well-documented literature on the performance indicators of the industry and, in particular, indicators related to leadership, diversity and innovation. This is supported by the participants' agreement (1.23) that this was the first time they were participating in in a research study on the relationship between leadership, diversity and innovation in the construction industry, which ranked 2nd. The participants agreed (1.08) that there is a direct relationship between workforce diversity management and the innovative abilities of the workforce.

Furthermore, the participants agreed (1.04) that there is a direct relationship between leadership's focus on diversity management and the degree of innovation within organisations. This finding correlates with the findings on the role of leadership in effectively driving and managing these issues.

7.4.6 The level of importance of diversity, leadership and innovation in the South African construction industry

In section two of the questionnaire, participants were asked to rate the level of importance of ten statements on diversity, leadership and innovation using a not important to somewhat important Likert ranking scale. The purpose of this was to evaluate if there was a perceived difference in level of importance at a micro (organisational) level and a macro (industry) level. For analysis purposes these were coded as very important = 2, somewhat important = 1, neutral = 0, somewhat unimportant = -1 and not important = -2, as shown in detail in Table 6.9. The results were analysed through descriptive analysis and are shown in Tables 7.12 and Table 7.13. These results include the mean scores and ranking of the various statements. For purposes of data interpretation in this section, the results are shown as follows: mean scores 0.0 to 0.67 = Neutral, means scores greater than 0.67 to 1.34 = Somewhat important, and mean scores greater than 1.34 to 2.0 = Very important, as per Table 7.11.

Table 7.11: Descriptive legend of section two questionnaire results

Ranking Scale	Coded as	Interpretation
Neutral	0	0.0 to 0.67 mean score
Somewhat Important	1	>0.67 to 1.34 mean score
Very Important	2	>1.34 to 2.0 mean score

7.4.6.1 Level of importance at organisational level

Table 7.12 shows that, according to the participants, leadership and organisational diversity through diverse factors such as age, ethnicity and culture, gender, race and capabilities are very important (1.63) at organisation level and ranked 2nd. Effective diversity management was ranked 5th in comparison to the other statements, although the participants ranked it as very important (1.58) at organisational level. The participants rated effective management of diversity as very important (1.58), suggesting that there is an understanding of the requirement for effective diversity management in the South African construction industry. These findings are related to the findings reported under diversity in Table 7.7 on the requirement of strategic

drive to effectively drive diversity management. This focus is perceived as necessary for the effective and successful implementation of diversity in the South African construction industry.

Table 7.12: Level of importance at organisational level

Level of importance at organisational level						
Q#	**Statement**	**Mean**	**Std**	**Score**	**Rank**	**Interpretation**
044	Leadership and organisational diversity through diversity (age, ethnicity and culture, gender, race, and capabilities).	1.63	0.680	1.63	2	Very Important
045	Effective diversity management.	1.58	0.699	1.58	5	Very Important
046	Innovation.	1.76	0.578	1.76	1	Very Important
047	Innovation policies and solutions.	1.59	0.724	1.59	4	Very Important
048	Increasing the interaction between different types of disciplines and experiences by advancing diversity.	1.59	0.612	1.59	4	Very Important
049	Integrating diversity management into strategic leadership discussions and decision making.	1.61	0.695	1.61	3	Very Important
050	Diversity and Inclusion as a driver of innovation.	1.49	0.719	1.49	7	Very Important
051	Leadership effectively managing the relationship between diversity and innovation for the purposes of addressing the challenges facing the industry.	1.54	0.716	1.54	6	Very Important
052	Implementing recruitment policies that advance diversity and inclusion.	1.59	0.711	1.59	4	Very Important
053	Holding leadership accountable for advancing diversity and inclusion through KPI's.	1.58	0.763	1.58	5	Very Important

Table 7.12 demonstrates that participants rated innovation as very important (1.76) at the organisational level in the South African construction industry and ranked it the most important of the concepts. Innovation policies and solutions were also rated very important (1.59) and were ranked equal to increasing interaction between different types of disciplines by advancing diversity and implementing recruitment policies that advance diversity and inclusion, which were both rated equally, as very important (1.59). This is a thought-provoking finding as it highlights the previous neutral results, reported in Table 7.7, on recruitment policies and indicates a perceived need for these, and for better clarity on their implementation in organisations in the South African construction industry. As shown in Table 7.12, the participants rated the integration of diversity management into strategic leadership discussions and decision making as very important (1.61) and ranked it the 3rd most important. This indicates that there is a need for leaders in organisations in the South African construction industry to start having the discussions about diversity.

This finding seems to relate to the neutrality finding on diversity conversations and the low ranking of the statement. Diversity and inclusion as drivers of innovation were rated by the

participants as very important (1.49) but ranked the least important. This finding further indicates that there is a perception that diversity and inclusion in isolation will not necessarily drive innovation, or that innovation can still occur in the absence of diversity and inclusion. Therefore, the participants do not perceive diversity and inclusion to be very important in driving innovation in organisations in the South African construction industry. According to Table 7.12, the participants rated "*leadership effectively managing the relationship between diversity and innovation for the purposes of addressing the challenges facing the industry"* as very important (1.54) and 6th out of 7. This shows that addressing the challenges facing the industry is considered to be very important for organisations in the South African construction industry. The findings show that the participants had consensus in rating leadership accountability for advancing diversity and inclusion through KPI's as very important (1.58) even though it was not ranked in the top three, this finding is consistent with the findings of this study on the significant role of leaders in effectively managing these issues.

7.4.6.2 Level of importance at industry level

This section provides the results of the participants' ratings of the level of importance of statements on diversity, leadership, and innovation at an industry level. The participants had consensus, as they rated nine out of the ten statements as somewhat important, with mean scores ranging from 1.12 to 1.28 at the industry level. Innovation was the exception, rated as very important and ranked the most important concept, as shown in Table 7.13. This finding indicates that the participants view innovation as an equally important construct both at organisation and industry level as it received the same ranking (1st) on both. Leadership's efficacy at managing the relationship between diversity and innovation to address industry challenges, was ranked least important (8th) at the industry level. This indicates that leaders within the construction industry are not supposed to be addressing industry wide challenges. This could be due to the perceived leadership vacuum in the industry, or because the participants possibly believe that this should be a government led matter. This finding could further suggest a perceived lack of collective cooperation within the industry and between industry and government. This perception is supported by the lowest ranking (9) for holding leaders accountable for advancing diversity and inclusion at an industry level.

Table 7.13: Level of importance at industry level results of the questionnaire

Level of importance at industry level						
Q#	**Statement**	**Mean**	**Std**	**Score**	**Rank**	**Interpretation**
054	Leadership and organisational diversity through diversity (age, ethnicity and culture, gender, race and capabilities).	1.19	1.083	1.19	5	Somewhat Important
055	Effective diversity management.	1.18	1.167	1.18	6	Somewhat Important
056	Innovation.	1.50	0.912	1.50	1	Very Important
057	Innovation policies and solutions.	1.22	1.187	1.22	4	Somewhat Important
058	Increasing the interaction between different types of disciplines and experiences by advancing diversity.	1.22	1.088	1.22	3	Somewhat Important
059	Integrating diversity management into strategic leadership discussions and decision making.	1.22	1.179	1.22	3	Somewhat Important
060	Diversity and Inclusion as a driver of innovation.	1.15	1.167	1.15	7	Somewhat Important
061	Leadership effectively managing the relationship between diversity and innovation for the purposes of addressing the challenges facing the industry.	1.14	1.195	1.14	8	Somewhat Important
062	Implementing recruitment policies that advance diversity and inclusion.	1.28	1.118	1.28	2	Somewhat Important
063	Holding leadership accountable for advancing diversity and inclusion through KPI's.	1.12	1.337	1.12	9	Somewhat Important

Table 7.13 depicts that the participants ranked implementing policies that advance diversity and inclusion as the second most important at industry level, in comparison to ranking it 4th at organisational level. This finding could suggest a perceived lack of accountability at organisation level on managing these issues and passing this on to the government or an industry body, which further speaks to a leadership vacuum, and lack of ownership in driving diversity and inclusion in South African construction organisations.

7.5 QUANTITATIVE DATA FINDINGS

The quantitative research finding can be summarised as:

- Diversity, inclusion, leadership and innovation are viewed as important topics in the South African construction industry, which require further study and research to understand their impact on organisational performance.
- There is no consensus about diversity and inclusion being difficult conversations to have in the South African construction industry, alluding to a lack of awareness and to dialogue about these issues not being considered important in the industry. This indicates that the construction industry in South Africa, has not been having conversations about diversity and inclusion and its importance.

- The South African construction industry continues to attract and retain males, in particular white males, as they dominate the industry despite efforts to attract and recruit more females. Therefore, indicating that there are gender diversity and gender equality challenges in the industry and, furthermore, that the South African construction industry is neither transformed nor inclusive.
- Leadership diversity and organisational diversity were rated very important at organisational level. Diversity such as age, ethnicity and culture, gender, race, and capabilities were found to be critical for driving organisational success in the industry.
- The findings indicate that there is a relationship between diversity, leadership and innovation in the South African construction industry and that the effective management of the relationship by leaders in the industry is important. This finding is aligned with the correlation coefficient results, which showed significant positive correlations between the constructs.
- Holding leaders within the South African construction industry accountable to drive diversity and inclusion was rated as somewhat important for the industry and ranked low for organisations. This indicates a lack of ownership and accountability in driving and managing diversity within the industry, which could be related to the indication that the industry is not transformed.
- There was evident consensus among the participants that leaders in the South African construction industry have a critical role in driving diversity in their organisations to improve diversity in the industry, even though this is contrasted by the apparent lack of accountability on these issues.
- The findings show that despite equal opportunity laws in South Africa, women and other historically discriminated-against groups continue to remain disadvantaged and disempowered in the construction industry organisations relative to their white male counterparts. This indicates that though there has been an attempt by government and other industry governing bodies to drive diversity in the industry at organisational level, this has not translated to positive, tangible transformation results for the construction industry.
- Implementing recruitment policies that advance diversity and inclusion was rated very important at organisational level and ranked second most important at industry level.
- The construction industry in South Africa is shrinking and is struggling to cope with economic pressure because of the lack of innovation in the industry.

- The findings show that diversity increases and strengthens the interaction between different types of construction disciplines and levels of expertise.
- There were perceived differences between the participants, regarding the level of importance of diversity, leadership. and innovation at an organisational level, in comparison to the industry level. This suggests that the importance of diversity, leadership, and innovation could have varying levels of impact on organisations in comparison to their impact at an industry level and vice versa.
- Some of the issues were rated to be more important only at organisation (micro) level than at industry level (macro). However, innovation was evidently ranked the most important at both a micro and a macro level. This indicates that there was consensus that innovation is seen to have equal impact at both at organisational and industry.

7.6 SUMMARY OF THE CHAPTER

In this chapter the results of the quantitative phase of this study were presented, highlighting the results of each of the constructs under investigation. The data were collected using the questionnaire administered through the digital platform survey monkey, then tested and analysed with the SPSS 27 software tool. The reliability tests results of the instrument were also presented in this chapter, as were the legends of the descriptions and interpretations used in the tables. The results presented showed that the participants mostly agreed with the majority of the statements on diversity and leadership, although there was some indecisiveness on a few of the issues. Thus, suggesting that there was consensus on most of the issues under diversity and leadership. On the innovation construct, the participants strongly agreed with most of the statements and were neutral on the link between the industry's innovation maturity and diversity and innovation management initiatives. The following chapter focuses on the qualitative data analysis and results of this study. It will discuss, contextualise, and summarise the findings from the in-depth interviews held with 24 industry leaders.

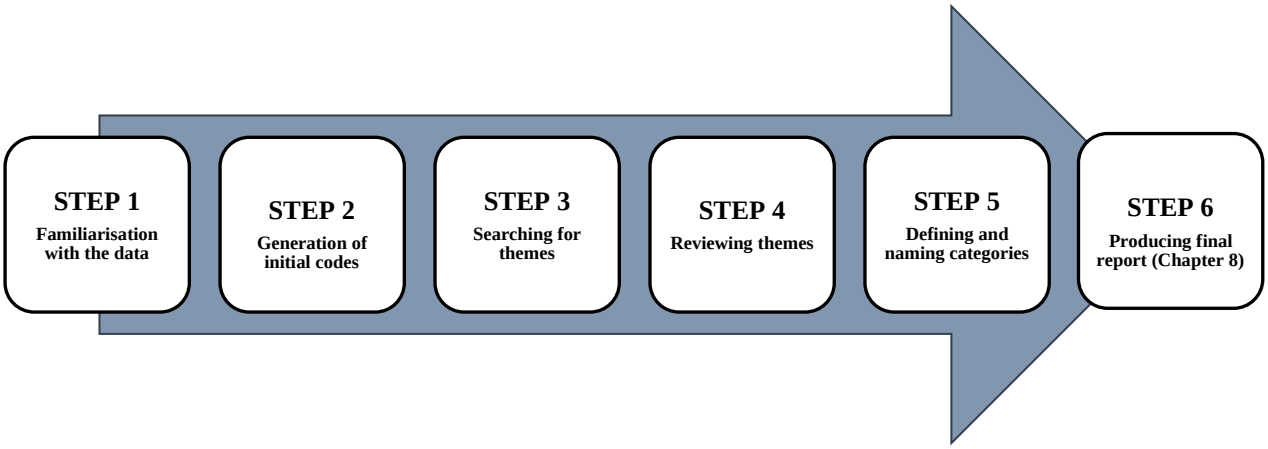
CHAPTER EIGHT:
QUALITATIVE DATA ANALYSIS AND RESULTS

8.1 INTRODUCTION

This chapter provides and discusses the findings of the qualitative phase of the study obtained through the semi-structured interviews that were conducted with 24 executive leaders in organisations across the various disciplines in the South African construction industry. including, industry bodies such as the Council for the Built Environment (CBE) and the South African Forum of Civil Engineering Contractors (SAFCEC). The data were analysed with an inductive thematic approach using the NVivo 12 software tool, as described in sections 6.4.2 and 6.9.2.1 of Chapter 6. The aim of the qualitative phase of this study was to obtain a deeper understanding and in-depth data on how executive leaders within the SA construction perceive, view, understand, and interact with diversity, inclusion and innovation, and their level of commitment to these factors, with a focus on leaders' relationships with the elements, and how they influence and manage this relationship to drive inclusive innovative solutions in the industry. The emergent themes of the interview transcripts are presented in this chapter. A few selected quotes from the interview transcripts are included in some sections of this chapter to highlight key points in the development of the emergent themes.

8.2 THE INDUCTIVE THEMATIC APPROACH ADOPTED

As detailed in section 6.4.2 the qualitative research approach in this phase of the study was the inductive thematic approach. The following Figure 8.1 depicts the process followed.



Source: Braun and Clarke (2006)

Figure 8.1: Inductive thematic approach, process flow adopted in this study

8.2.1 The inductive thematic analysis coding process

The coding process that was followed to arrive at the prevalent themes discussed in this chapter, began with full video recordings of the semi-structured interviews conducted via the Microsoft Teams meeting platform. The recordings were listened to, to ensure clarity and no breakup of the interview recording. The audio recordings of the meeting were then transcribed to text, using the verbatim transcription method, which is word for word transcription, meaning every part of dialogue is transcribed into text as heard. After the transcription was completed, the interview transcripts were read and checked to ensure accuracy. Thereafter, each transcript was loaded and saved onto NVivo 12 under separate specific files, to ensure the integrity of each transcript. From these interview transcript files, open nodes were created, using the drag and drop action. On conclusion of the interview processes, there were 24 valid completed interviews. When all the 24 interview transcripts were fully coded, there was a total of 416 nodes. These were then checked for duplications and cleared, leaving 414 nodes. These remaining nodes were then grouped into, **1)** negative nodes, **2)** positive nodes and **3)** other nodes, meaning neither negative nor positive. From these 3 segments the emerging themes were identified. The prevalent themes discussed herein were then determined from the emerging themes. Appendix E presents the NVivo emergent themes and Figure 8.2 depicts this process.

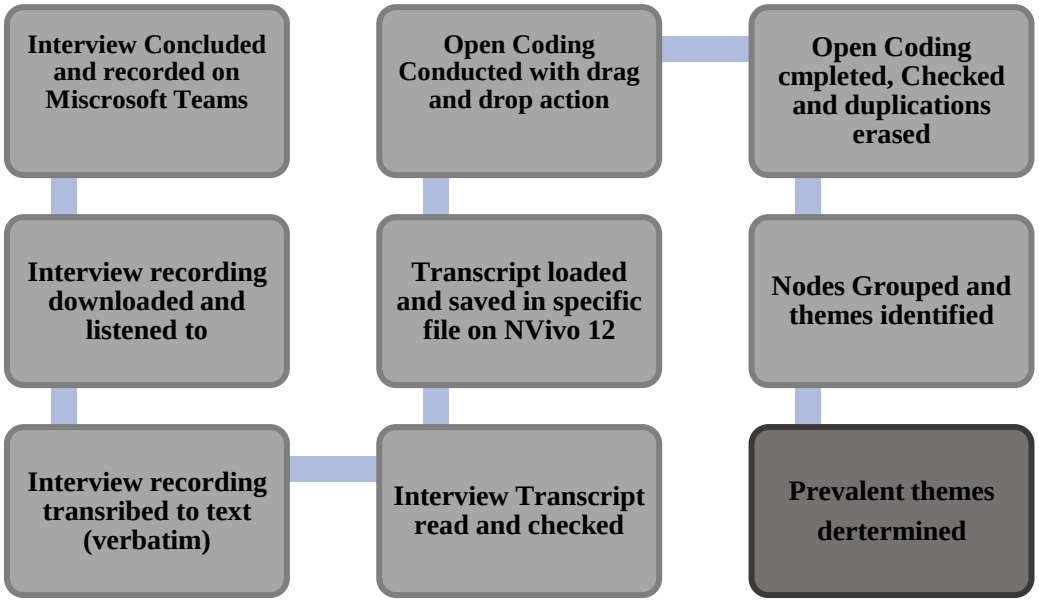


Figure 8.2: The inductive thematic analysis coding process

8.3 SEMI-STRUCTURED INTERVIEW RESULTS – EMERGENT THEMES

The views and experiences of 24 South African construction industry leaders on diversity, leadership and innovation, were evaluated through semi-structured interviews. The semi-structured interviews sought to answer the main research question of this study which was, how does leadership drive, influence and manage the relationship between diversity and innovation to advance organisational performance in the South African construction industry? The participants were asked 20 open-ended questions and given the opportunity to freely express their views, share their experiences and ask any clarifying questions. These interviews were in-depth and provided much context on the constructs under investigation in this study and therefore produced the qualitative data for this study. Five emergent themes were derived from the thematic analysis. These are discussed in this section of the chapter.

The analysis of the qualitative data was guided by the interpretive paradigm underpinned by the social constructivism philosophy adopted in this study, as detailed in sections 6.2 and 6.3 of Chapter 6. This interpretive approach is informed by an interpretive framework wherein the data collected is not viewed as evidence of the truth or reality of a situation or experience but rather as a context-bound subjective insight from the participants. The researcher needs to be open to new insights and to privilege the participant's experience in data collection (Nathan *et al*., 2019). The constructs under investigation in this study are considered to be complex and challenging (Winston and Patterson, 2006; Latham, 2014; Korejan & Shabhazi, 2016). Therefore, the interpretive framework found to be appropriate for this study enabled the researcher to explore participants' perceptions of the constructs in the context of their organisational cultural environments and through the lens of their experiences, beliefs, and values. In analysing the data, there were frequently used words which emphasise the views and experiences of the participants regarding the constructs and form a recurring theme about these. Words related to the topic, such as construction, industry, leadership, are expected in the word frequency. However, the two most frequent words, "people" and "think" give further insight into the perceptions of the participants about the study. Figure 8.3 depicts some of the words most frequently spoken by the participants in the qualitative interviews, with words such as "think," and "people" used most often.

This shows that the constructs under investigation are people associated issues which affect thinking processes and perceptions and are therefore complex matters to research and study (Matthieu *et al.*, 2008; Stewart, 2010).

Figure 8.3: Qualitative data analysis word frequency

8.3.1 Emergent Theme One: The characteristics of the South African construction industry

The South African construction industry is characterised by unique and general attributes which are both positive and negative. These characteristics were detailed by all the interviewees, and it was evident from the responses that the characteristics of the industry have a significant impact on how leaders within the industry experience, relate, interact with, manage, and drive leadership, diversity, and innovation to achieve their organisational and industry goals.

8.3.1.1 The SA construction industry is a sustainable industry

The findings show that the South African construction industry is more frequently characterised negatively. Therefore, it was interesting that the sustainability of the industry was identified as a differentiator that has the potential to make the construction industry a pioneer. The long-term nature of the industry was perceived to be a positive character trait as this could be a unique characteristic that distinguishes the industry; however, in order to achieve this, the South African construction industry must be more proactive in its approach to addressing issues

(A6, A7, A8, A17 and A18). These findings are emphasised by following statements from A6, A7, A8 and A17:

> **A6:** *"So unfortunately if you are thinking 3 years ahead and you are thinking you are going to have a large number of let's say diverse players that can contribute, they are not just going to be there overnight, you will have to start now, be proactive that in a couple of years' time there will actually be significant people that can contribute."*
>
> **A7:** *"What often worries me is that it's the balance between shortism. Taking a short-term view versus taking a longer-term view on issues."*
>
> **A8***: "In construction and engineering that short term might be ten years."*
>
> **A17:** *"Is construction industry different? It probably has a much longer-term return of what's happening."*

The findings further revealed that the construction industry leaders believed that the industry is characteristically not a proactive industry and lacks visionary and futuristic leaders that can drive long term strategies (A1, A2, A6, A7, A8, A12, A17 and A18). However, the findings also show a counter opinion, that there are parts of the South African construction industry that are more proactive than others (A7 and A13) as some segments of the industry, such as project management tools, have evolved with time, as signified in this extract from A7's interview:

> **A7**: *"I think that there are components that are more proactive than others. I think that levels of project management over the years have moved."*

The analysis showed that, within the South African construction industry, proactiveness should not be seen in relation to technological advancements only but also as responsiveness to social and economic and market changes. The analysis also indicates that proactiveness should be an enabler for sustainable growth in the industry. Proactive management is a responsible way of managing organisations. It is not just the right thing to do to mitigate against risks, but a requirement for sustainable organisations. Furthermore, proactive management of diversity is very important as it leads to organic growth.

8.3.1.2 The SA construction industry is not diverse, and it is untransformed

According to the findings, the South African construction industry has the negative characteristics of being untransformed and having an image of being too masculine, a space only for males and, especially white males. The prevalent theme was that the industry is not committed to transformation, diversity and inclusion and that the legislation (BBB-EE) that is put in place to assist with transformation is used as a tick box exercise (A2, A7, A8, A18, A10, A24, A21, A4, A23 A11 and A5). This finding is substantiated by these statements from A18, A7, A8 and A4:

A18: *"You know the industry is not diverse at all in terms of particularly race, age as well and gender and BBB-EE has sort of become a tick box exercise"*

A7: *"I have got to get either a BEE rating or yes, there is a movement and then you have this knee-jerk response to this so, what I am saying is that these, it's rarely thought out if I can put it that way. The real purpose of this and the benefits of this, so I think often what I see or the response that I get is saying yes let's tick the box."*

A8: *"It's also the industry that used BEE as a front right from the beginning, right off the bat."*

A4: *"But we know that companies haven't been committing, they have been kind of doing a tick box exercise where, so at the end of the day there is nothing that really gets achieved because it is not really done from the heart. It is done from the mind, just to make sure when we are doing submissions at the end."*

There was also a consistent finding that the South African construction industry has a gender inequality issue as the efforts put in place to attract more females are not sustainable because females do not stay in the industry. The analysis showed that was that the is persistent perception that the industry does not support and retain females, the statements from A24, A21, A20 and A10 are some examples of this:

A24: *"Overwhelmingly so. Let me expand a bit on that. All our clients in the private sector tend to be white and male. We don't have a single female client even for residential projects. The larger projects are all managed and run by white individuals. One of the companies, of course I won't mention names, one of the clients' companies has a big black shareholding but all the management that engages with the projects and the like are white males. The person I have to answer to is still a white male."*

A21: *"In the construction industry I think we face two things, not just only the addition or inclusion of more African people, black people but we also have a gender issue."*

A20: *"So, basically where I work and have worked is that it is difficult for females to actually take leadership in construction because we don't open doors for them. We don't allow them."*

A10: *"I think it's brotherhood in a sense of a male community, and it is still predominantly a male thing."*

The analysis showed that transformation is a process. It doesn't happen by simply introducing one or two changes but it's a systematic process that requires transparency, consistency and good communication. Diversity and inclusion must not be seen as compliance issues based on head count. They must be business philosophies. Although none of the diversity and inclusion plans initiated by legislation, have been strongly and aggressively opposed, passive resistance meant that they have often been implemented as compliance measures rather than as strategic imperatives for the organisations. As a philosophy, proactive management is important to challenge the rigidity of the industry and find ways to do things quicker, safer and cheaper (A10, A20, A14, A13, A9, A11, A20, A12, A8, A1, A23, A21 and A24).

8.3.1.3 The SA construction industry has the potential to innovate but lacks willingness and commitment

Innovation was seen as an integral part of any industry, including the construction industry. However, the assessment was that the South African construction industry is characterised by an unwillingness and lack of commitment to innovation, even though it has the potential and opportunity. The industry has not innovated as it should. The allocation of risk in the industry hinders any innovation. The capital works projects are very expensive and result in a risk averse industry. Although the industry has the ability to innovate, the rigid processes and systems that are adopted in the industry hinder it. To successfully implement innovation and drive innovative ideas these need to be aligned to organisational performance and organisational goals. Much more needs to be done to create an environment conducive to innovation in the South African construction industry (A1, A22, A9, A15, A14, A17, A8, A13, A23, A24, A11, A18 and A6). These findings are highlighted in the statements by A1, A15, A16 and A23:

> **A1:** *"So, I think the construction industry, it's got lots of potential to innovate. There's lots of things that it could do. It's however not doing it typically because of the way it's led and managed at the moment."*
>
> **A15***: "My view on the ability to innovate is that we have potential, but we have to operationalise those potentials even from clients. Most of the time we use the client as an excuse because we say they are not giving us the platform to be innovative. So, the client will also need to be educated even starting from the government side. So, in terms of ability, the construction industry has the potential, but it has to be harnessed and even from the educational sector."*
>
> **A16:** *"It is rigid in parts, or more prescriptive in parts, but there is ample opportunity for creativity and what you might do differently. Hence then, diversity of skills and people."*
>
> **A23:** *"I think that there is a certain level of good ability to innovate and find new opportunities when economies change or demands change. I think probably not as innovative when it comes to times like COVID where you can be hit by a complete double whammy."*

Furthermore, there is the need to have innovation that works for South Africa's contextual landscape and translates to tangible client solutions and that seemingly innovation in the South African context could lead to more unemployment, according to A3, A8, A6 and A21.

> **A3:** *"Technically I have seen some genuinely amazing things come out, the challenge is how do you convert that into a solution for a living client."*
>
> **A8:** *"We need our African innovation really, that is actually very linked to our own context. We can't be following global trends all the time because sometimes those are very costly and sometimes those are inappropriate. Sometimes our local innovative processes are actually cheaper and more conducive to change in the industry."*

A6: *"It's a very important sector in South Africa but if you start thinking of innovation, and quite often there's an element to, but we're going to now implement maybe practices mechanisation, new designs, which might lead to fewer physical people being employed in the construction industry."*

A21: *"Again, a fear right, because when you see something new, when you see robotics, when you see AI, when you see the cloud stuff, when you see big data, you are going 'oh my God is this going to take my job'."*

The relationship between leadership, diversity, and innovation must be understood within the context of South Africa's high unemployment levels. While innovation is important to the industry, it could have a detrimental impact on the country, such as a reduced labour workforce in a labour-intensive industry (A3, A8, A6, A21, A1, A2, A14 and A24). There were counter perspectives, that suggested that not all organisations need to be innovative; that there are those that are willing to be followers and not pioneers of new ideas and are comfortable with being a number 2 or 3 within their industries; that this approach should be acceptable as well (A7); and that, in order for innovation to thrive, systems and processes are necessary. If these are well managed, they should not hinder innovation (A24, A17 and A14).

8.3.1.4 The SA construction industry is rigid and resistant to change

The South African construction industry was regarded as a characteristically rigid industry that is resistant to change. The traditional methods and ways of doing things, including the standards certification, make the industry inflexible and unresponsive to market changes. To improve diversity and inclusion in the industry, the status quo, for example, the existing power relations, needs to be challenged. The construction industry's responsiveness to economic changes is very slow, old fashioned and rigid because of its proven systems, and is resistant to any form of change. The industry is, therefore, exceedingly slow to react to economic changes and is not open to venturing outside the box and employing diverse people to encourage innovation. Diversity and inclusion are still seen as a threat among leaders in the South African construction industry and are often met with resistance in the form of both passive and deliberate resistance. Although there are structures in place to improve both diversity and innovation, there is no willingness to implement these (A23, A8, A2, A4, A16, A9, A21, A24, A22, A15, A11, A6, A3, A7, A13 and A1). The extracts from A23, A8, A2, A16 and A9 provide further context to these findings:

A23: *"It is an industry that is quite rigid and maybe quite old school I suppose in many respects. Things are done the same way for many years without much change."*

A8: *"Very slow, very lagged, very old fashioned."*

A2: *"Because it is an industry that is so resistant to change. People don't like inclusion; they don't like diversity because it is a human trait that you like to be surrounded by people that are like you…."*

A16: *"That's the resistance to change. People who want to keep the status quo"*

A9: *"They are still using the old methods, methods that have been tried and tested, yes in the 1960's or whatever, they work but right now there is a new way of doing things and they are not open minded about doing things in a new way"*

A3, provided some practical professional team dynamics of how working on projects within rigid processes and systems can be frustrating when trying to bring change in the SA construction industry:

A3*: "I find South African construction industry quite set in its ways and a little bit moralistic, it's very irritating, no this should have come out like this, you can't possibly put this piece of work in this way."*

Furthermore, according to A11, A9, A14, A22 and A16 comparatively their experiences suggested that the South African construction industry appeared more resistant to change in comparison to some parts of the world:

A11: *"That is my own personal take about the construction industry in South Africa. Surprisingly when I compare it with other African countries like the construction industry in Nigeria, they are even more innovative and adaptable than South Africa."*

A9: *"I felt that this was a South African issue, definitely South African issue because the moment we started engaging with our counterparts in different countries, what they prioritised versus what we prioritised was slightly different."*

A14*: "Some changes are very hard, the changes in some of the South African context are particularly hard in my view."*

A22: *"It may even be at a country level compared to other countries."*

A16: *"So, we are behind but it's not as though the best minds in the world aren't aware of this and are trying their level best to make huge changes in some of the stuff that's coming out of Australia, China, the UK and Finland…."*

The following statements showed that within the SA construction industry there is resistance to diversity and inclusion, which is both literal and passive resistance, as people feel threatened by change. There was also resistance towards language diversity with a strong preference to exclusively using Afrikaans to communicate. The expression of resistance manifests itself in different ways, such as lack of support for differences and unsubstantiated complaints, as expressed in the experiences by A22, A15 and A9.

A22: *"Yes, definitely, a lot. Remember, resistance brings a lot of negative energy but it's also then how much attention you give to negative energy."*

> **A15:** *"So, I have always experienced that kind of resistance which is just expected for me because I know people might not understand the concept of this diversity and inclusion."*
>
> **A9:** *"I have actually found a resistance towards using the English language as well you know, people will say it's okay to use your mother tongue but as a black person once you start speaking a native language that is almost seen as a taboo, but Afrikaans is okay because Afrikaans is seen almost as the equivalent of English. So, there is a resistance towards language and being yourself, there is a resistance towards accepting that."*

A5 shares experiences of literal non-passive resistance, indicating a perception that certain organisations within the South African construction industry are determined not to change:

> **A5:** *"It's in my face. It's resistance really, that's all it's about. It is really difficult now to implement certain things because there are companies that are determined not to diversify. So, I don't know how we can actively drive that diversification objective if it is being crippled somehow. So yes, we can have a number of black-owned firms, but if those are not given the opportunity to operate in the market, we will never get to the diversity level that we see in the future."*

A2 expressed a positive counter-perspective, arguing for the commitment and resolve against resistance that, as a CEO, one will always get resistance from those not supporting the diversity and inclusion agenda, but one needs to still focus and not be deterred:

> **A2:** *"You get a lot of resistance when you push this agenda. It was not an option to be diverse, it was a core business strategy. So, once we have decided that it is a core business strategy. I do believe you have just got to change the people out if they stand in the way of your strategy, but some functions we have made, and we have made the argument that diversity is a core strategy that is essential."*

Another characteristic of the SA construction industry was that there is seemingly less resistant to transformation and diversity at lower levels in the organisations than at senior levels. Although there is resistance towards implementing diversity and inclusions, it appears to always be more prominent in relation to top executive management positions and there is also specific resistance associated with specific roles in the industry, such as appointing females as construction site directors overseeing large construction projects. There is a lot that still needs to be done to address diversity in South Africa. Although there is diversity in the lower ranks of the business, there are no clear pathways to top management (A21, A8, A10, A5, A24, A23, A18, A20 and A22). These statements by A21 and A8 are some examples:

> **A21:** *"What seems to happen in most businesses and, particularly maybe, construction and engineering as well, is that you have more black people hired at the lower levels at the organisation because that is where, apparently, you find more black people."*

> **A8:** *"It's funny, when you are pushing diversity at lower levels there is no resistance, everybody wants the coffee lady to be black and they want the cleaning lady to be whatever, there is no resistance. I mean I have seen it happen over and over. You know people don't mind if there is someone in a wheelchair who is sitting at reception, nobody cares, in fact they feel very good about that, middle management there might be a little bit but not so much. The minute you talk about executives, it really starts touching on a really raw bone. The minute you talk about your board it starts touching on the raw bone."*

A21 elaborated that this phenomenon ultimately impacts who actually manages, and makes decisions in, organisations:

> **A21***: "So, what happens is that what you do have, at a certain level at mid management and below you will find large numbers of black people and the problem then becomes that when you looking at who runs the company, who comes up with the strategic directives and so on, the transformation pillars, its leadership so then the question is how many people of colour and very diverse backgrounds, gender, etc. are actually at the forefront of driving these kinds of strategic initiative? Because, if you don't have people of colour there, you are not essentially changing anything."*

The analysis revealed counter perspectives and experiences of support, and positive experiences of welcoming transformation and the opportunities that existed to educate and drive effective diversity management in the South African construction industry. Resistance to change will always occur as people generally always feel threatened by change. As a leader, one must demonstrate empathy for both sides and tell a better story about the envisioned change.

The analysis showed that leaders in the South African construction should always strive to openly address misconceptions and people's misgivings about diversity and inclusion. It is very important to manage perception around diversity to ensure inclusivity and long-term impact. Leadership must communicate with the organisation and bring the business along on the journey to change, engage and not dictate change. Some leaders had positive experiences whenever they pushed the agenda of diversity and inclusion. These leaders found that the experience challenged them to address biases and assumptions that thy may have had (A24, A10, A14 and A13). A24 and A14 highlight some of the positives and opportunities they have experienced:

> **A24:** *"The interesting thing is that resistance comes from many different quarters. So, for me resistance isn't a bad thing, I see it as an opportunity to hone the work you do. We have had a bad instance of resistance in the form of other consultants telling us sit in your corner and don't do anything, we encourage resistance because that is an opportunity for us to measure the progress of what we are doing and how to improve what we are doing."*

> **A14:** *"So, you need to have an honest conversation with people and try to breach those. Maybe address some of the misconceptions and misplaced apprehensions about change and try to tell a better story, create a better narrative for the organisation where everyone is a beneficiary of diversity."*

8.3.2 Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation

The benefits of multinational diversity organisations are more likely to be unleashed when the diverse team members (the workforce) engage in open knowledge exchange and act as a real connected team because without behavioural integration and effective communication, the benefits associated with differences in experiences, knowledge, cultural and educational backgrounds cannot be effectively tapped into (Boone *et al.*, 2019). There was a strong thread related to the importance of leadership's ability to effectively integrate and manage diverse teams because it would merely be diversity in isolation and would not be related to organisational and industry success. The analysis revealed that the relationship between workforce diversity management and workforce innovation is very important. The two are interlinked and intentional leadership of diversity should then create inclusion, resulting in innovation.

The relationship between workforce diversity management and workforce innovation is very important for the alignment of purpose and realisation of business objectives in the South African construction industry. The analysis further revealed that purposefully curating the teams to be diverse is important because people from different backgrounds have different experiences and opinions and harnessing those differences could lead to improved efficiencies, creativity and innovation (A22, A1, A9, A2, A4, A23, A24, A16, A19, A13 and A11).

A22 shared positive experiences as a leader managing and working with diverse teams:

> **A22:** *"I like working in teams where you bring different minds, you bring different backgrounds, and you bring up a different racial group so that people then learn to work as a team, because there's more unity when they realise oh wow, we've done this together and it serves over and above, indirectly, the objectives of the organisation."*

A9 emphasised the importance of the relationship between workforce diversity management and innovation for organisational success:

> **A9:** *"So, because people come from different backgrounds, they have got different experiences, they have got different interests. It is important that the team itself is diverse enough to be able to think out of the box when they encounter different obstacles because the sad thing is you just cannot use the same method for everything nowadays.*

So, having that workforce management and having the workforce innovation, those go hand in hand."

Diversity in South Africa can often be one dimensional and may appear to be confrontational due to South Africa's racial apartheid history. Nevertheless, the results suggest that diversity should be implemented with a balanced approach that drives inclusivity. The data further indicates a perception that diversity is not about having an all-black or all-white workforce. Diversity must be understood as a balanced workforce that is representative of the diversity of the country. The responses from A22, A8, A14 and A13 substantiate this:

> **A22:** *"it is also important to recognise the importance of diverse skills and not to be single minded to say, you know, it's this group or this kind of individuals that are able to do certain things. But to instead have that level of development that is balanced through diversity is desirable even for the sector to thrive."*
>
> **A8:** *"It's a question of being able to balance your workforce in such a way when they look around in the room, they see what is there in the country. You mustn't be even biased to say we are in the Western Cape so our workforce should be around the Western Cape population. Whatever philosophy or principle you choose in terms of diversity, explain it. So, if you are working at a national level you have to have a national reflective workforce. The point is you need to be balanced"*
>
> **A14:** *"I think that is the key part, how you create that pathway and how you address the imbalance. But to get to address diversity, you don't want to create a view that people haven't got to where they have got because of their talent and skill so that has to be the ultimate goal."*
>
> **A13:** *"So, in terms of your leadership team you need to have a mix, a mix of the old school of thought, a mix of the young, innovative minds, so that at the end of the day that mix will then balance each other so that they move forward."*

The analysis showed a counter perspective about the negative aspects of diversity if not managed effectively because, without a clear direction and vison, it can be chaotic. Proactive management is crucial to overcome the negative effects of diversity as well as getting the best out of diversity. Some of the negative results of diversity were described as political interference, the lack of planning and thinking broadly about the objectives of diversity. (A10, A22 and A8).

8.3.2.1 Collaboration

Collaboration was a key component of this theme and includes both internal industry and external collaboration with other industries in order to be more innovative and sustainable. The industry can create a learning space where people from different locations, backgrounds and disciplines can come together and learn from each other through collaborating and exchanging ideas. A lot more work needs to be done in the South African construction industry to create a

conducive environment for collaboration. Collaboration is very low across construction organisations, mostly because the teams compete for the same clients. Collaboration is thus often seen as a threat in the industry. The South African construction industry was characterised as not open to new ideas and working with and learning from other industries, like the agricultural and mining industries.

The findings further reveal that collaboration across different disciplines within the industry was identified as very crucial for the success of the industry. (A1, A7, A4, A23, A21, A15, A18, A10, A13, A22 and A19). These statements from A23, A15 and A22 support these findings:

> **A23:** *"So, I think not as good as it probably could be because I think if you just look at engineering. Engineers are very bright people, great project managers and great thinkers and obviously very good at putting schemes together but I think very often, I don't think there is maybe enough workshopping of, between all the different disciplines. I think we still tend to work very much apart as opposed to together."*
>
> **A15:** *"But if we have a way to really collaborate and, thankfully, BIM tools allow this technology and say now, we can work together even from the conceptual stage of your design, you can send out your design to the other person to impute and not when everything is ready, and you see it can't be changed. So, those are the reasons for our rigidity and slow pace of innovation."*
>
> **A22**: *"So, collaborations have been our winning instrument, for example, because we are capitalising on collaborations in terms of achieving our objectives but also to be able to influence certain perspectives."*

Workshops and conferences were identified as key to cultivating and improving collaboration in the construction industry. The data indicated that leaders within the South African construction industry should cultivate an environment where the workforce can collaborate through workshops, colloquiums and conferences. The perception was that not enough emphasis is placed on this within the industry; hence, the lack of creativity found in most parts of the industry. Workshops would encourage the cultivation of ideas across different teams, for example, between architectural and engineering teams, which would create efficiency across teams. Workshops and colloquiums would also encourage cross pollination between young people and older, more experienced members of the various teams. The findings show that there is power in collaborating and investing in new ideas (A4, A1, A6, A10, A14, A23, A17 and A19). These extracts from A23 and A19's responses are examples of the statements that substantiate these findings:

> **A23**: *"Being a small practice it is important to have workshops. We have that internal education and bringing people around the table. We use workshops to coordinate how*

we manage our jobs whether it be from a time basis point of view and trying to get people involved, and those times are profitable., And then, on the design perspective as a brand, and then how do we work as a team because you may have a design architect, a person who is drawing drawings, how would this feed into that particular team."

A19: *"So, we have these little sessions where everybody can present their side of the world to others. What that does is it facilitates conversation; it facilitates people's decision-making ability because they want to make a decision that would not only benefit themselves. They will make it for a wider benefit. Engineers specifically, in my experience, tend to think, I'm engineer I'll just do what's right. Sometimes doing what they think is right is detrimental for a commercial reason or for a construction reason or for management reasons. So, it's quite important to make diverse people speak to each other. Speaking to people is the best way I believe and having structured sessions where everybody can present."*

A6 had a contrary perspective that, while collaboration is good and has benefits, it is also important to ensure that trust exists between diverse teams to increase collaboration and encourage innovative thinking. Therefore, highlighting that often, due to the diversity of teams and the different educational, cultural and ethnic backgrounds, trust is not easily achievable. This will need to be addressed if the industry is to benefit from increased collaboration:

A6: *"And to overcome that, you know, there needs to be very, a good amount of trust between the people participating in a construction project, that they are willing to share ideas and participate in innovative thinking, and not be scared to participate because they think they might lose their jobs in the longer term. So, you have to be very good in managing diverse teams to create that environment. Otherwise, they'll try their best to keep it as is because that creates job security for them."*

The findings show that the lack of collaboration in the South African construction industry contributed to the economical and non-performance challenges, such as the slow rate of growth and the increased unemployment faced by the industry (Bhorat *et al*., 2016). To improve collaboration and innovation in the industry, structured sessions with professionals from different industries need to be facilitated to encourage the sharing of ideas and tapping into other people's skills. Furthermore, the data revealed that there is also a push from investors into the industry, for example, banks and private investors funding a construction project, towards innovation and sustainability. Sustainability is now increasingly being measured by the diverse mix of the organisation being invested in. Otherwise, the organisation is considered a high-risk investment (A5, A3, A8, A7, A24, A9, A15, A21 and A10). These statements by A7, A9, A15 and A21 provide further insight into these findings:

A7*: "I think it's a problem on seasoned construction not to have the intra disciplinary approach, in other words you get the planner who comes in and the construction and the geo-technical guy and imagine the geo-technical guy commenting on the structural engineers – unacceptable. These are professions that are all sitting in their silos, and I*

think that particular structure plays a role. If you don't have the intra, not inter, which means that you allow the different Professions to influence each other, and I think that is maybe one of the problems…"

A9: *"I think they could have done more in terms of collaboration because different units worked as islands, and they were quite isolated and as much as different disciplines needed to do or have different outcomes there is a lot more collaboration that could have happened and integration between the different units to make us all feel as one. It became a more competitive environment than a collaborative environment"*

A15: *"One of the things that we often experience is this rivalry in the industry, even though sometimes it is not spoken when you are in a project meeting. As an architect I tend to, that' my background, as an architect you tend to want to say, well this is my design and I tell you this is how it has to be. Remember the civil engineer or the structural engineer will say no it cannot be solved for this building to last long, and everyone is just trying to show superiority over others and all this kind of conflict creates a fracas and just makes it more difficult for us to work together."*

A21: *"So, the one thing we repeatedly get a very low score on in our engagement surveys is collaboration. It is one of our lowest scores. It's not very low but it is lower compared to the other scores that we get measured on. Collaboration for us is very high within the team but between teams is low."*

The need for external collaboration with, and learning from, other industries and countries was further referred to in the following statements by A11, A15 and A19:

A11: *"On collaboration also, with the international firms consulting or construction firms. Collaborating with other international firms that will also drive inclusivity."*

A15*: "We have to engage and collaborate with other industries. We have to collaborate even with IT."*

A19*: "So, we have diversified with external companies, international companies' joint ventures. So, diversity through joint ventures and partnerships is a great way of doing it. The international exposure I think that's quite important, try and see, even if people go for sabbaticals and work at the large construction firm. Just see that because there's lots of innovations, lots of smart ideas out there that we simply don't know."*

8.3.2.2 Communication

Communication was a common link across all the themes. However, it was mostly in its relation to effectively managing diverse teams, clients and stakeholders in the industry. The findings show that there was an emphasis on clear, deliberate and open communication. The data shows that there is a lack of communication in the South African construction industry particularly, on issues of diversity and inclusion. Transformation is a process. It doesn't happen by simply introducing one or two changes but it's a systematic process that requires transparency, consistency and good communication. To increase collaboration and innovation in the construction industry, the implementation of a matrix structure based on three key principles of communication, collaboration and connection, was considered necessary and

essential. Furthermore, leaders in the South African construction industry must be willing to engage in open dialogue about diversity and transformation. The data indicates the importance of having uncomfortable conversations to drive the necessary change in the industry.

The findings indicate that there is a need for leaders within the industry to communicate more clearly regarding strategies for collaboration and innovation and create learning spaces. Leaders must communicate with the workforce and bring them along on the journey to change, by engaging and not just dictating change. These findings seem to indicate a need for an approach that encourages mutual buy-in for integrating diversity in organisations through open and transparent communication. The following statements by A6, A9, A13, A1 and A18 reinforce these results:

> **A6:** *"You need to have good communication, and a very clear and open sort of vision and approach of where you are going"*
>
> **A9:** *"I think the most important part in leadership is keeping people motivated and if you miss out on the opportunity to clarify certain things, you could possibly miss out on the opportunity to take your people with you on a journey that could be on a progressive journey that could be beneficial to both you and them."*
>
> **A13:** *"They must be clear, there must be an understanding of say why do we do things like this. You consult with them; you engage with them to say as an organisation this is where we want to go in the near future."*
>
> **A1:** *"You change an organisation; you change an industry by changing the conversations that you have within that organisation. The power of conversation is a really important thing. Unless you change the conversations inside the organisation around the water cooler, around people and you got to invite the debate and you cannot, you've got to invite critique, you've got to allow criticism. You've got to allow people to get the things off their chest, and you've got to allow this communication to occur in an open and unfettered way."*
>
> **A18:** *"We need to start having uncomfortable conversations around diversity, around inclusion. I think that's the only way to appeal to the goodness of man really, because the policies are there."*

The findings substantiated by the statements from A9, A8 and A14 indicated that those organisations that cultivate a learning culture as more successful at integrating diversity and innovation. Leaders play a role in mentorship and creating growth and development opportunities. Leaders in the construction industry need to create a learning environment; an environment that allows the workforce to trial things and in which, if they fail, they learn from their failures. This will assist in entrenching a culture of innovation within organisations. The key, however, is how a leader embeds a learning culture into an organisation and succeeds at driving innovation. The findings indicate that leaders need to create a culture of openness to

new ideas, scale and invest in them, and share the success stories. This will inspire the workforce and there will be more diversity and innovation because they will know that diversity, creativity and innovation in the organisations are encouraged and celebrated:

> **A9:** *"You've got to give them the room to explore and within exploring you've also got to understand that mistakes can happen and that when something does not go according to plan as a leader, you need to embrace that as part of the learning journey."*
>
> **A8:** *"Right now I think it's an industry where mistakes, you see this is the thing about innovation and creativity, mistakes should not be what defines you, mistakes should be learning phase, but there is no room for that kind of learning phase because those mistakes, they cost money and they do happen and so dissentions are very harsh, and people rather now stick to a true and tested formula of doing things."*
>
> **A14***: "I mentioned safe zones so, the question is how you actually allow that space of literally playing with ideas and of course you have a structure where people fail cheap and fail fast just so they can recover and learn. So, for me leadership those who can do that well, they can embed a learning type organisation."*

8.3.2.3 The importance of inclusion in integrating and managing diverse teams

Inclusion emerged as an important aspect of diversity management and ensuring team cohesion and collaboration. The leaders in the construction industry need to focus on not just hiring people for the sake of balancing numbers but for meaningful work that achieves objectives. The emphasis should be on proper inclusion and adequate use of an individual's skills and not gender or race. Inclusion is then the ability to effectively advance the potential out of an employee beyond just including them in meetings and projects. The findings show that an intentional leadership drive for diversity and workforce diversity management in the South African construction industry will establish inclusion. Therefore, to improve diversity, the South African construction industry needs to focus on inclusion. This is clear from the extracts from A22, A14, A4, and A12:

> **A22:** *"I think there is something over and above that we need to aim for although I cannot clearly articulate it but, for me, it's saying can we go a little bit beyond? Once you have hired the individual what are your expectations? Are you going to demand more, or you are hiring that person for diversity, or you are bringing that person in for her capability that you want to capitalise on?"*
>
> **A14:** *"So, on one account it's easier to lead that way but if you actually deal with complexity of diversity - it's the inclusions that are a critical part of that. Because there are teams that look diverse, but they might not actually be diverse because the mindsets are similar or it might be because not all the members are equal, that is where the inclusion comes."*
>
> **A4***: "think we have got to be inclusive. It is the inclusive and the acceptance that will make people stay in the industry and the appreciation that will be shown."*

> **A12:** *"The way I explain diversity to myself is that diversity is being asked to dance, it's being invited to the party. Inclusion is being asked to dance so you are participating a bit, but belonging is bringing and playing your own music. How many times do we create a culture in our own organisations where every single one of our employees feel that they can bring and play their own music without feeling out of place or angering someone, so that is where it starts, with inclusion."*

The findings indicate that to drive better inclusion in the industry, leaders could introduce day care facilities for both male and female employees, always bring in female employees into critical conversations about strategy and decisions in the organisations and be very conscious of gender bias issues. Furthermore, organisations could start hosting lunch and learn sessions to talk about diversity and inclusion issues, invite outside perspectives and new ideas from other industries. Leaders must play an active role in mentorship and creating growth opportunities for the workforce, with a focus on females and the previously disadvantaged. They should support student graduate program employees with mentorship and coaching as well as availing opportunities to them to gain practical experience (A12, A4, A22, A14, A17, A16, A20, A7, A21, A24, A8 and A5).

8.3.3 Emergent Theme Three: Leadership capabilities, Qualities and Personal development

In sharing their experiences about their roles and interaction with the constructs in this study, the participants' capabilities, qualities, shortcomings, failures, growth and personal development gaps and needs emerged as a consistent and recurring theme. An interesting finding is that there are various aspects in this theme that relate to the characteristics of the industry already discussed under theme one. The findings indicate that there are linkages between some of the leadership capabilities and some of the characteristics of the industry. These are highlighted in the considerations in this section.

8.3.3.1 Leadership ability to drive diversity, inclusion and innovation

The following responses from A1, A22, A9 and A5, signify that a leader's own qualities are important in driving and managing issues of diversity, inclusion and innovation. The findings indicate that leadership is understood to be the cornerstone of any organisation because everything starts and ends with leadership. Leaders must be introspective about their legacy and the kind of industry they want to leave behind:

> **A1:** *"So, I think how leaders can better manage the relationship between diversity factors and innovation starts with their own qualities as a leader. How they absorb*

ambiguity because things like diversity and innovation are ambiguous by nature. Leaders within the South African construction industry need to look at themselves"

A22: *"Well for me what is important is especially the leadership, because for us to even achieve diversity and innovation, it is centred around leadership. So, it means then if we have poor leadership then achieving the objectives of diversity and innovation is going to be almost impossible."*

A9: *"So, if the leader does not believe in innovation, in workforce diversity, it will show. It will show in the performance. It will show in the culture of the organisation. Now leadership and people in leadership have got the opportunity to shape how the organisation can move forward embracing innovation and embracing diversity."*

A5: *"I'd say leadership, for me is very important. Because even if you are to drive an innovation project, you have to have those qualities of a leader in order for you to see it through. And also, I believe that within a leader there comes a person, or an individual who has to be very open minded in terms of gender, in terms of age."*

The data showed that there was a perception that the current leaders in the South African construction do not possess some of the capabilities that are required to effectively drive and manage diversity and innovation. The findings indicate that in order for the industry to successfully manage diversity and innovation, the industry needs to look for leadership skills beyond just technical ability; it must curate leadership teams of diverse skill sets. The South African construction industry needs to take a fresh look at its leaders and their leadership capabilities. A leader needs to be secure in their position and who they are. Leaders in the industry need to be more passionate about their organisations' diversity and innovation and work hard at demonstrating these to their workforce; this is substantive in the statements made by A9, A15, A14 and A15:

A9: *"The type of leadership that is required in this day and age is the leadership that understands that diverse teams can actually be a lot more powerful than getting a team of like-minded people and that a leader has got to be someone who is, in my head, it's a leader who is a bit more visionary in terms of being able to foresee what the future could possibly look like."*

A15: *"Most of the industry leaders so far are not able to plan long term. They look at the economic situation, the cyclical nature of construction and they are not sure of their business so how can they even plan long term. So, I believe that a reactive leader cannot lead in this kind of environment and in this kind of industry"*

A14: *"So, I think proactive leadership for diversity and innovation requires actually being quite comfortable with ambiguity and to an extent not having an answer for everything and, you know, sometimes feeling that you don't have controls of the outcome."*

A21: *"I think number one is to get the right people in these organisations to be the leaders. So, perhaps looking at how the leadership themselves need to change before they can be able to manage the relationship between diversity and innovation. What are companies doing to make sure that they have the right representation at leadership*

level because for as long as you have your old leadership teams intact, predominantly white males etc. how are they going to do that, I am not sure."

The above responses are strongly linked to the characteristics of the industry theme on diversity, transformation and resistance to change. The results further show that to get the most out of a diverse team, effective leadership talent management and leadership style are very important. Leaders can only effectively lead a diverse team if there is diversity in leadership. Teams must be managed creatively to innovate for value rather than to innovate for innovation's sake. Proactive management as a philosophy is important for the industry and must not be confused with the science of engineering. Where engineering is absolute, leadership is nimble and flexible and creative in its application. The data indicates that one of the challenges of the industry is that there is seemingly no leadership either by individuals or by an entity representing the industry. The lack of leadership is leading to fragmentation and thus no focus on diversity and innovation (A1, A2, A5, A7, A8, A18, A24, A11, A23, A10, A3, A16 and A24) and this statement from A16 incapsulates these findings:

> **A16:** *"Who are the leadership of the construction industry? In days gone by, I would have said the big 5 construction companies definitely would have been classified as being the figureheads of leadership. There's no Leadership. We've looked to the CIDB but there's no visibility. So, it's very fragmented at the moment to my mind."*

A12 and A10 made the point that leadership is also about caring about the workforce and being in touch with their day-to-day challenges. The findings show that these leadership capabilities are critical in an industry as complex as construction:

> **A12:** *"You will know that you are successful when two things are in place; one, they are better able to see around the corners and always ask the question so what else is missing? Because while engineering is an absolute science, leadership is both a science, but its application is actually an art. Our people don't care about how much we know, they just want to know that we care about them, that is the leadership distinction that I am making."*
>
> **A10:** *"Well, the one major thing is to be in touch, you cannot do that by sitting in an ivory tower somewhere and that is not leadership anyway I suppose. But you have to be in touch; know what is going on in the workforce and on the floor where the product is being designed, built, etc."*

The findings show a counter perspective from A24 who argued that the challenge is not the absence of good leaders, but rather the absence of opportunities in the South African construction industry for leaders to showcase their capabilities, as reflected in the extract from A24's responses:

> **A24**: *"I suspect that there are many leaders on different levels of leadership so in other words in business leadership, in politics leadership, in sports leaderships, in community groupings, in the family, in all sorts of contexts. So, there is no shortage of leadership. My view is there is a dearth of opportunity for people in leadership positions to exercise their skills."*

8.3.3.2 Leadership is a position of influence

It was clear from the data that there was an understanding that leadership is about influence, specifically, in driving effective change in an industry. Effective and influential leaders will have the effect of directing and getting sustainable and positive results from diversity and innovation. Without leadership focus and influence, the objectives of diversity and innovation will not be achieved in the South African construction industry. Being in a leadership position affords one some level of influence within the organisations. Therefore, the ability to drive and manage the relationship between diversity and innovation is very important.

These outcomes imply that if one is not in a leadership position, one is not in a position of influence in terms of driving diversity and innovation in the organisations. People follow what their leaders do and not what they say. Leaders must be seen to be leading diversity and innovation discussions and generating ideas. These findings are demonstrated by A5, A24 and A4's statements:

> **A5:** *"So, based on my experience, I would say I do think it is important because from what I've seen in the industry is that if you are not in a leadership position, you are not in a position of influence in terms of innovation in the company."*
>
> **A24:** *"But it is all about influence, so you need to understand your role in a two-way conversation as opposed to one way. So, this is the problem if you are at the bottom of that one-way conversation, you get ignored or if you are on top you dismiss an opportunity to broaden innovation or a way of thinking through the problem."*
>
> **A4:** *"I think, as you know, people learn by observing their behaviours and how the leaders lead so they then would follow the leader's shadow. So, leaders should be, they should inspire and influence."*

The findings reveal opposing outlooks that assert that one does not have to be in a leadership role to be influential, drive change and innovate. The data shows that there was a perspective that innovation and creativity can and should come from all levels within an organisation and not just from the leaders. The extracts from A23, A16 and A19 substantiate this:

> **A23:** *"I always try to encourage people to think for themselves and come up with new ideas and you know even if they are not right. It is kind of the opportunity that you have got to be able to voice your opinion."*
>
> **A16:** *"So, leadership is fascinating. One doesn't often know that you are being a leader. I've always found that those that I identify best with, those that I think have broadened*

my mind by showcasing how it can be done have been those that didn't have an agenda. It's not about them it's about what we can do together"

A19: *"Great ideas are always where we don't expect them. So, listen to the people. People already know better than you do especially, if you are in management. Leaders get stuck in spreadsheets and don't come down to the real world some days."*

8.3.3.3 Leadership Development

One of the positive outcomes was the acknowledgement of ownership of the shortcomings in the leaders' capabilities and skills. There was an emphasis on the less technical skills required to successfully drive and manage complex issues such as diversity, inclusion, and innovation. The data intimated that leaders in the South African construction industry need to further develop the acumen and capabilities on communication, marketing and creative skills in order to improve their ability to lead change, manage diversity and drive innovation in the industry. The data revealed the perspective that leadership in the South African construction was weak and needed to be strengthened. These are captured in the response from A18, A22 and A3:

A18: "*There is a whole lot more engagement with business forums, with leadership, with youth forums. But what we are finding is that as engineers we are struggling with that. We are struggling with that aspect because we've never really been trained on it. We are now being asked to go stand in front of 400 people and go and explain to them what is it that we are doing in their municipality. So, we find that the message also is not getting across as well as it should be because it's not something that we are very comfortable with."*

A22: *"Leadership for me is central. It's an area that needs to be strengthened."*

A3: *"I think it is personal growth. The construction industry doesn't have a vocabulary around personal growth for leaders. My contrast is (organisation X) where every leader needed to go to a development centre to develop skills around leadership. Non-technical – how to run a meeting, how to manage conflict, how to talk to superiors and deal with difficult clients, how to handle a crisis, a PR crisis, and these would be role plays in development centres. So, you didn't make partner unless you passed development centre so, not only were they deliberate about it, so they handed you the skills and other partners evaluated you."*

8.3.3.4 Transformational Leadership

The findings show that in order for the South African construction industry leaders to be able to progress on matters of diversity, inclusion and innovation, they require transformational leadership qualities. The results indicate that transformational leadership qualities are lacking in the industry. The data uncovered that transformational visionary leadership is key to understanding that a diverse team will be more innovative and would create better profits for organisations and ensure the sustainability of the South African construction industry. To scale up innovation, the industry needs to create a clear vision of the why, identify areas that need to

be changed, and then mobilise and invest in innovation. A leader must understand that they don't know everything. It is therefore important for a leader to empower their teams to bring new ideas, and new technologies and innovations forward in order to build a sustainable organisation. For the components of leadership to succeed in the industry, leaders will need to be catalytic in their approach, which means that they are able to effectively combine uniquely diverse skills towards achieving organisational goals (A15, A17, A21, A9, A10, A1, A2, A5, A24 and A19). These findings are asserted in the statements by A14 and A22:

> **A14:** *"I think if you want to drive innovation, the other part is have a compelling vision of the future and if people say they don't know how to get there but they want to get there, I think that is something as a leader you have to go beyond to achieve."*
>
> **A22:** *"When it comes to leadership, when you lead, yes, you can be at the forefront but that kind of consistent looking back which could be whether it's through training but also a kind of self-reflection as an organisation to say we've been going on this journey can we just look back as a team and then reflect."*

These findings are related to theme one on the characteristics of the construction industry being rigid and resistant to change, as they refer to the need for leaders to embrace and be open to new ideas.

8.3.4 Emergent Theme Four: Recruitment, Training and Retention

The recruitment, training, and retention of the right people in organisations, emerged with a focus on actively recruiting for diversity, attracting and retaining more females into the industry. The findings indicate that the South African construction industry has not been proactive in terms of recruitment, training and retention in order to advance transformation and diversity. The results show that the organisations in the industry are reactive in their approach to managing diversity and that they focus more on compliance to regulations. The indication is that the industry has been more focussed on getting the female and black numbers to comply with BBB-EE codes, instead of ensuring that it has a diverse recruitment pool. The findings further reveal that the negative impact of being reactive is a lack of sustainable transformation in the industry.

The females and black individuals are then viewed as tokenism and are, therefore, not supported or effectively included, which causes them to exit the organisations. The findings highlighted a need to be more deliberate and proactive in recruiting for better diversity in the industry (A1, A5, A11, A14, A13, A16, A18, A6, A17, A22, A23, A9 and A24). The following responses from A9 and A22 focused on the importance of deliberate recruitment:

A9: *"I think diversity needs to be driven intentionally, you know. The emphasis that is placed on experience is always good, it is always welcomed but sometimes it becomes a barrier actually for different leaders to come into that space. So there has to be intentional efforts to diversify the teams within the construction space and the leadership teams specifically.*

A22: *"Okay, so I think it's important that we get the right people in the right jobs. Firstly, irrespective I think you need quality candidates in any industry, in any jobs, in anything. So, they have got to have the right credentials, the right degrees. I think that's the license to operate that we are talking about. But if we are looking at how we level the playing fields to make sure that we are diverse, inclusive, and so on, I think that is looking at ensuring that we get the best candidates and I think that starts from creating awareness...."*

8.3.4.1 Recruitment and retention of females into the construction industry

The findings referred to the challenge of recruiting and retaining females in the South African construction industry in specific specialised. The industry particularly struggles with retaining females due to the lack of support they experience. This finding is related to theme one's finding about the negative, male dominated image that still prevails in the industry, despite attempts to attract females. The findings indicate that it is important for the industry to have sustainable programs and incentives that focus on female retention. The data further indicated that because females do not get the necessary support and are not allocated to projects, they then struggle to complete their professional registration, and this contributes to the skills shortage and the high unemployment in the industry (A1, A3, A5, A23, A9, A4, A11, A16, A20, A19, A21, A13, A7, A10 and A24). These extracts from A5, A15 and A21 support these findings:

A5: *"So now, like when you're recruiting, and let's say you're looking for a project controls manager, you will barely find a black woman age, say 30 – 35."*

A15: *"We need to consciously bring in more women and eventually the equation will be balanced."*

A21: *"Also with regards to gender because it's not so difficult to hire females into our industry but it's harder to retain them. So, we must make the workplace conducive to make sure that women feel comfortable once they are hired because they are predominantly with a group of males and sometimes white males. So, one of the things I run is called: How Woman Rise, which is a program around the habits that hold women back from reaching their full potential and career. So, that is throughout the world of my company that we do. That is a program specifically for women."*

The findings highlighted that at leadership level, namely at Executive Management and board level, there is persistent gender imbalance, with the majority of those roles being occupied by males, in particular, white males. The data shows that females continue to struggle for inclusion in a male dominated environment, which hinders their contribution and performance within the

organisations. The results indicate that the industry does not give leadership opportunities to females and needs to improve on this in order to drive and improve diversity. These findings are linked to the industry characteristics identified in theme one. These statements from A20, A19 and A13 signify these findings:

> **A20:** *"I feel that is a very important thing to do, especially where we are currently in the country and where we are in the construction industry. It's very important for us to allow females to partake in leadership roles and manage and lead men"*
>
> **A19**: *"I've heard that women don't get appointed because they'll get pregnant."*
>
> **A13:** *"I remember one of the manufacturing companies that I worked for, when I brought females there was a big hoo-ha, the engineers were fighting about it. No, you cannot bring these females here, they are going to get pregnant."*

The findings revealed an interesting dynamic that demonstrates that gender equality should not be perceived as simply being limited to black females, but should include all females, regardless of race, as the industry has historically discriminated against all females. This perception is based on the fact that historically, white females were more advantaged than black females under the past apartheid laws. This is illustrated in A8's statement:

> **A8:** *"I mean I will be in a conference and we will talk about diversity and a young black female is going to say you are saying this and this, but there is XXXXX who is sitting there as an Executive Manager and she is a white female and my question would be, would it make you feel better if we were all black? Would that mean that we are diverse? Where are they supposed to go? They are South Africans themselves. You just have to get the right person with the right values that match values of the institution and are reflective of the country. It's not just numbers or race."*

8.3.4.2 Training and skills transfer

There was a strong understanding that another challenge to diversity and innovation in the industry was the lack of skills transfer from the older, experienced generation to the younger entrants and, vice versa, as younger people adapt easier to change. The findings indicated that leaders in the South African construction industry can play a pivotal role in ensuring that the workforce is trained and empowered to understand the role of innovation and diversity in an organisation. Training on diversity and inclusion will also assist in changing people's mindset, as the industry has a lot of old people who are seen to be rigid and set in their ways and therefore resistant to change. The data showed a perspective that construction organisations are not willing to invest in learning and development. There is a need for the industry to start encouraging and creating opportunities for further education and development in order to create a sustainable workforce. The results indicated that the industry has a generational gap challenge

which hinders skills transfer. (A3, A19, A21, A13, A9, A5 A6, A16, A23, and A24). These extracts from A3 and A19 are reflective of these results:

> **A3:** *"So you have the knowledge and insight sitting with one group that operates in a particular way and the future of the industry sitting with another group, that is just from the professional point of view."*
>
> **A19:** *"A lot of the senior people I used to work with were those people and, as they started to retire there was a gap. It suddenly left people of my age as being the most senior engineers in the team. So, it was sometimes difficult to find the guys who have done it a lot. So, it is quite interesting, at this stage process engineers tend to be reasonably well spread age wise but the mechanical guys there is a bit of gap…"*

A6 highlighted the importance of skills transfer from larger organisations to smaller ones to drive sustainable diversity and inclusion in the industry:

> **A6:** *"I think it is very important if you would like to see in 3 years' time that there is a lot more smaller players that can contribute to a construction project you will have to act now and you will have to make sure that those players are enabled, they learn the trade on smaller projects, and once you get to a larger project these teams are actually capable of delivering what is expected."*

The findings show the negative impact of ageism on implementing innovation in the industry, highlighting the lack of generational cross-pollination as a challenge. The data revealed that younger employees are perceived to adopt new ideas and technology better than the older employees, who are understood to be more rigid and resistant to change. This finding further indicated that younger employees did not stay in the industry due to its rigidity and traditional characteristics. The industry still comprises a majority of the older generation who want to do things the way they have always done them, which perpetuates the status quo and hinders the ability and opportunity for skills transfer. The data indicated that in order for innovation and skills transfer to be successful, leaders need to find a better way to manage and balance issues such as ageism (A7, A9, A8, A24, A23, A2, A16, A11 and A19). For example, A7, A9 and A19 said:

> **A7:** *"to understand at some point that it becomes more and more difficult to be the innovator as you get older. I think you are more and more entrenched in your views. You are more and more fighting even if you want to be innovative, you are actually fighting a bit you know."*
>
> **A9:** *"in my experience I have found that, as an example, the younger generation is a bit more tech savvy than the older generation. They are more willing to learn new technologies, try things differently you know. Explore a bit more and, obviously, with that comes errors, comes success, comes breakthrough, comes a whole lot of things that will be different from the way things are done."*

A19: *"If you're older than 50, you don't want to change the way you work. You are confident in how things worked and you're not really keen on adopting new technology because it's so much different learning new technology than it is to apply their knowledge. So, to apply your knowledge to a new technology is tough and I think companies need to manage that in order to improve the way they train the younger guys. So, you can improve your innovation by providing the right training to the right guys."*

8.3.5 Emergent Theme Five: Successful Organisations and Industry Impact

Diversity, inclusion and innovation lead to successful teams, organisations and, ultimately, a thriving and impactful industry, which can efficiently respond to challenges. The findings indicate that organisations that embrace diversity, inclusion and innovation perform better, and are successful. The findings indicate that there are benefits which are both tangible and intangible associated with diversity, inclusion and innovation in the South African construction. These benefits are successful organisations, improved design process and problem-solving, contribution to the economy, and positively impacting society. The data showed that if the South African construction industry leaders put in the effort required and invest in diversity, inclusion and innovation, the industry will have the impact on the economy and society of the country that it should have as one of the largest GDP contributing industries (A1, A5, A4, A15, A9, A10, A12, A11, A19, A15, A17, A21, A22 and A24).

8.3.5.1 Successful organisations

The findings show that organisations that embrace diversity, inclusion and innovation will have better metrics, both tangible and intangible. These organisations will be pioneers and other organisations will want to follow and emulate them. Within the construction industry, successful organisations are those that complete projects on time, within budget, meet all quality controls and increase productivity. Successful organisations in the South African construction industry will mean that there is a broader base of people being positively influenced by major construction projects, resulting in employment opportunities. The findings further indicate that successful organisations will lead to increased investment into the construction industry. The data showed that sustainable, profitable organisations had a positive outcome for the industry. The data indicated that successful organisations have happier, more contented employees and team, who are committed to growing the organisation's profits. The following statements by A1, A6, A18 and A7 reflect these findings:

A1: *"You become an organisation where other organisations seek to emulate you because you become successful. We all look to the organisations that are successful,*

we go well let's copy what they've done. So, you become a leader in the industry and that by itself and nature would shift other parts of the industry."

A6: *"You are going to have projects that are going to be delivered within the budget, within the time, within all the quality constraints because everybody is going to participate."*

A18: *"When you've got that relationship between diversity and innovation you create the space and the platform for innovation to thrive because it's working for you. We see people thinking out of the box and coming up with innovative solutions."*

A7: *"I am actually saying that companies that do these sort of things right are the companies that are going to give us the biggest returns, who are going to be, who will have shifted into innovation, who will come up with a new product, who understand what is going to work, who have thought about the future of the industry, have understood what the green economy and circular economy mean, are responding to all of that and are responding also to what the country wants to achieve"*

The findings revealed that diversity, inclusion and innovation will positively influence the culture in organisations and improve it outputs. This will improve the image of the construction industry and make it the industry of choice. The data revealed that some of the benefits that exist for construction industry organisations when leadership successfully drives the relationship between diversity and innovation would include a complete cultural change. Collaboration would become embraced leading to an influx of new and different people. This would lead to employee wellness and personal growth, as well as growth for the organisations and the industry ultimately. These findings are emphasised by A9 and A24's statements:

A9: *"The first one is a complete culture change, you will see the behaviour will change in how people do things, in how people speak about technology, in how people view collaboration, in how people implement what they are doing. You also see an influx of creative new young people wanting to join that industry, instead of it being viewed as an industry for old people who, you know, like being in the field or whatever the case is"*

A24: *"One of the goals that we measure in our company is that it becomes a happy place for everybody and on the face of it that sounds quite trivial but if you go into it, you will understand that if a business is only about chasing a buck, then people are expendable. So, in our place you are happy with what you are doing, you find purpose and you find meaning to what you are doing. So, you are able to tie maybe the values of how you see the world, the values of your business and you are able to execute that in the work that you do. So, it takes the focus away from going to work for the job.*

8.3.5.2 Improved design processes

The findings indicated that through diversity and innovation there would be an improvement in problem-solving and the design processes. This would increase productivity because of the analysis from AI (Artificial Intelligence) and from other industry relevant technologies. However, the data also revealed opposing views, by A6 and A17, about the perceived benefits

of introducing technological advancements in the industry. This correlates with the findings in theme one, on the possibility of job losses in the industry. The data indicates that while it is good for the industry to find better and efficient ways of designing and constructing, this will require serious consideration of the implications this will have for an emerging market such as South Africa (A9, A2, A4, A7, A11, A13, A17, A20, A22, A23 and A24). However, A23, emphasises that design improvements are more related to better cognitive thinking and problem-solving that would bring a benefit of a diverse workforce:

> **A23:** *"I think the more diverse the industry is, the more I think we are going to be very much solving problems in a very complex country that we find ourselves in, particularly when it comes down to housing and stuff that is really important in this country. I think the more we have diverse brain trust behind that and people being able to think differently and put things on the table and I think we will hopefully have a better country in the long term in terms of the built environment."*

8.3.5.3 Contribution to the economy and positive impact on society

The South African construction industry has strategic importance in the country's economy as it is a driver of socio-economic development and a key employment multiplier (Veitch, 2020). This feature is not only in the construction industry but in other industries of the economy, such as manufacturing, mining, transportation, real estate, and business services (CIDB, 2021). This characteristic emerged as a finding. The data revealed that to drive more innovative solutions, the industry must see itself as an agent of change and get involved with the country and its problems. When the industry starts solving societal and national challenges then it will drive more innovative solution. The data indicated that the industry is far more likely to achieve breakthrough innovations that can have an impact on society when it has diverse teams. The South African construction industry comprises a significant portion of the African economy. As such, it has a role to play, not only in the ongoing advancement of society and community in South Africa but also in the provision of jobs (A9, A2, A4, A7, A11, A13, A17, A20, A22, A23 and A24). These findings are supported by the statements from A2, A22, A23 and A12:

> **A2:** *"You are more likely to build something that is relevant to the needs of the community that it's going to serve because that is the one thing about construction industry, they build things that serve a community be it a road, a footpath or a hospital so you are going to have a better chance winning, you are going to have more profitability because you are building better, and you are going to have a happier community"*
>
> **A22:** *"The sector has such a key strategic position in the economic status of the country, it is very important that we focus on leadership*."
>
> **A23:** *"I think probably what comes to mind is the South African construction industry must be one of the biggest employers in South Africa. I think it's such an important part*

of our economy and provides so many thousands of jobs when times are good in terms of construction that I think that if we don't have that diversity and strong leadership, I think it's really going to affect people's lives. I think the built environment is between both creating jobs and problem-solving in a very complex country that we live in, so I think it's essential."

A12: *"like the mining industry that used to employ 900 000 employees now is down to 450 000, half actually, the construction industry must create more jobs, not in and of itself, no because they will be creating markets of the future. They need to contribute to the economic growth of this country because construction has that capability"*

The findings show that industry needs to start maintaining its moral responsibility to society, which emanates from being a big economic contributor and beneficiary during good times. The data indicated that when the South African economy is booming, the construction industry usually derives the largest income benefit. However, when times are tough the construction industry does not step forward with solutions as it becomes inwardly focussed. The findings demonstrate that, in the long term this is not good for the industry or the country because there are major opportunities in infrastructural improvement, of which the construction industry could be at the forefront. The statements from A24, encapsulates these findings:

A24: *"I think again, for me, it is again about purpose. The purpose of a leader in driving the business forward. If it is society focused, then it won't focus exclusively on profit. It's got meaning and purpose, critical reasons behind driving innovation. So, for me, it is about practical solutions and the practical solution for society is where the innovation is required. You also need initiatives to go with it, and you need perseverance to tackle these problems, particularly societal problems. In my experience as being resilient, it requires initiative to tackle it and also perseverance to see it through. So, I think the clarity of the mission of a leader, how does that person see his/her role in society? And then how do they see their role in solving problems? And then it becomes the purpose of what you are doing."*

8.4 QUALITATIVE RESEARCH FINDINGS

From the interviews and the emergent themes, the qualitative research findings confirmed that diversity, inclusion and innovation are important and complex topics, which spark genuine interest and a level of excitement from leaders. The industry is complex and has characteristics that are entrenched that make it difficult to adopt change. The South African construction industry is still not transformed and is not committed to driving diversity and inclusion. There are tangible benefits derived from diversity, inclusion and innovation. However, the construction industry has not fully realised these, due to its entrenched characteristics. These topics have not been well researched within the South African construction industry and some leaders believe these are difficult concepts to practically tackle and implement in the construction industry. The construct of innovation and its implementation in the South African

contextual landscape has been a most challenging for leaders to engage with it. Innovation is a challenging concept for the construction industry leaders due to the complexities it poses for the industry, resulting in a lack thereof. The South African construction industry has not taken its responsibility to society as a major infrastructure contributor and beneficiary, as seriously as it should. Opportunities do exist for the South African construction industry to innovate and provide innovative solutions to problems; however, the industry has not been good at implementing these. Diversity implementation without proper inclusion, is not sustainable. Diversity management and innovation should be strategic initiatives that are owned and driven at leadership level (EXCO and CEO). Leaders should ensure that they have the right capabilities and commitment to effectively manage these issues.

8.5 SUMMARY OF THE CHAPTER

This chapter provided the findings of the qualitative semi-structured interviews conducted with organisational leaders from the South African construction, inclusive of leaders from global organisations who have a solid footprint of providing services to the SA construction industry. The data was inductively analysed on the NVivo 12 software. The semi-structured interviews provided in-depth information on the views, experiences, challenges, shortcomings, interactions, and leadership styles in relation to driving and managing diversity and innovation. The findings revealed five emergent themes, highlighting the characteristics of the South African construction industry that hinder the advancement of diversity and innovation and impact organisational performance. The next chapter provides a discussion of the results and findings towards the development of a framework to articulate the mediating influence of leadership on the relationship between diversity and innovation to advance organisational performance in the South African construction industry.

CHAPTER NINE:
THE DEVELOPMENT OF A FRAMEWORK TO ARTICULATE THE MEDIATING INFLUENCE OF LEADERSHIP ON THE RELATIONSHIP BETWEEN DIVERSITY AND INNOVATION

9.1 INTRODUCTION

Resulting from Chapters 7 and 8, this chapter discusses the findings of the quantitative questionnaire and the qualitative semi-structured interviews. It provides details on the concepts and emergent themes arising from the data analysis and findings in relation to the research questions and objectives of this study. The linkages between the quantitative findings and qualitative findings are discussed in this chapter. The main purpose of this chapter is detailing and outlining the development of a framework to articulate the mediating influence of leadership on the relationship between diversity and innovation. This chapter will also depict the theoretical framework of this study in its relation to the developed mediating framework.

9.2 THE LINKAGES BETWEEN THE QUANTITATIVE AND QUALITATIVE FINDINGS

Combining quantitative and qualitative methods is useful when a researcher has the need to both explore and explain, and when either qualitative or quantitative methods alone seem inadequate to address complex research questions and topics such as leadership, diversity, inclusion and innovation (Bronstein & Kovacs, 2013). To investigate and analyse the role of leadership in managing the relationship between diversity and innovation in the South African construction industry, this study adopted a convergent parallel mixed method approach. The same approach was adopted to answer the main research question, which is, how does leadership drive, influence and manage the relationship between diversity and innovation to advance organisational performance in the South African construction industry? A questionnaire was distributed to the South African construction industry employees. Concurrently, in-depth semi-structured interviews were held with 24 construction industry leaders. This approach and structure of the research instruments were discussed in detail in Chapter 6. The findings of these were discussed in Chapters 7 and 8. The results show that there were no significant differences between the quantitative and qualitative findings. The in-depth interviews confirmed the statistical findings derived from the questionnaire.

Furthermore, the interviews provided depth, detailed examples, and a deeper understanding of the nuances and complexities of the concepts under the constructs investigated in this study. Thereafter, linkages between these findings were derived and are shown in Figure 9.1. These collective findings provided the comprehensive findings of this study which are presented in this chapter. These findings formed the basis of developing the framework to articulate the mediating influence of leadership on the relationship between diversity and innovation for the South African construction industry.

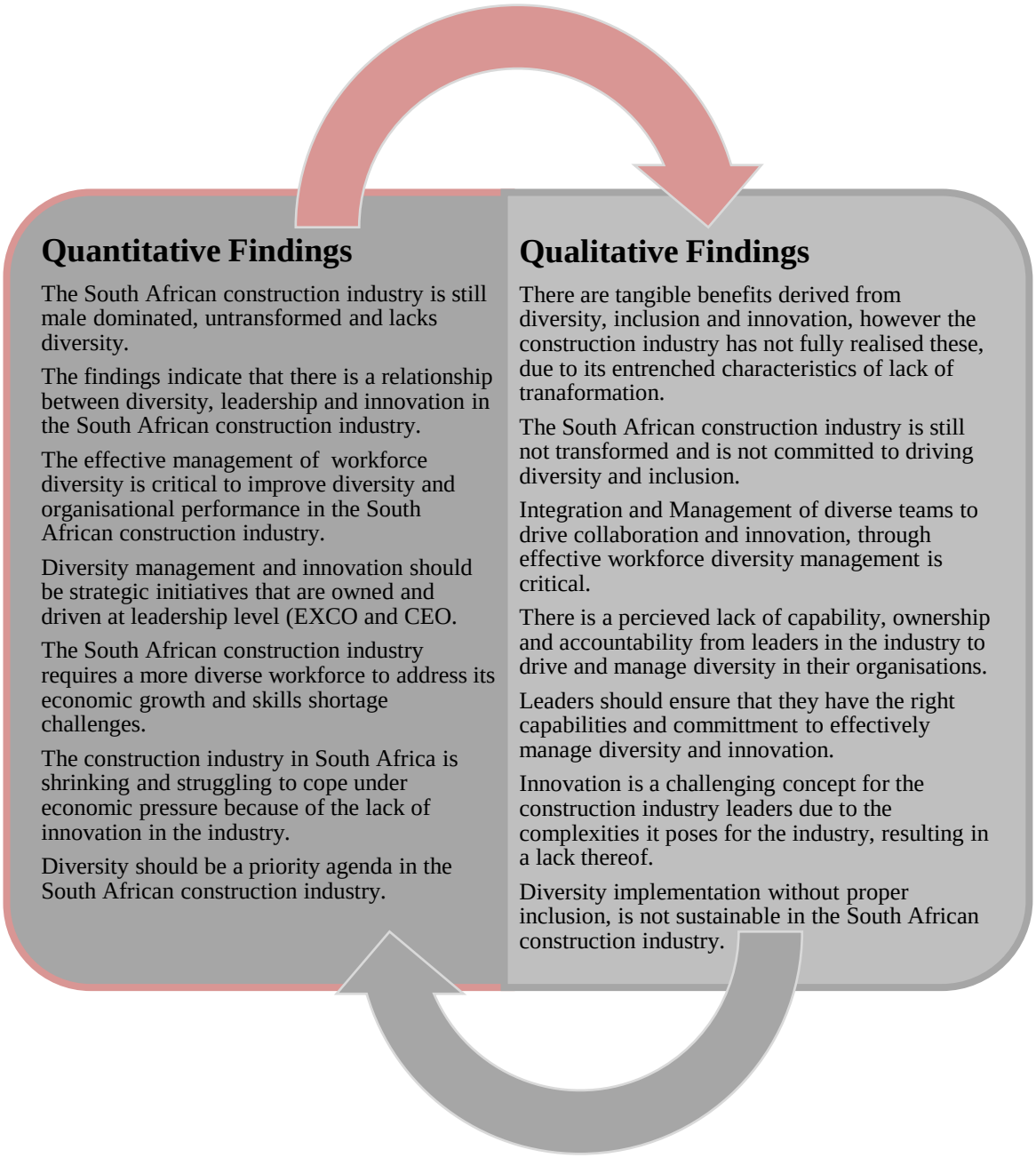


Figure 9.1: The linkages between the quantitative and qualitative findings

Figure 9.1 Shows the correlation between the quantitative finding on the construction industry still being male dominated and untransformed and the qualitative finding on the industry's entrenched characteristics of a lack of transformation. The findings depict a linkage between the quantitative results on the criticality of effective workforce diversity management with the qualitative finding on the integration and management of diverse teams. There is a linkage between the qualitative finding that the South African construction industry requires a more diverse workforce to address its economic growth and skills shortage challenges, with the qualitative result that the industry is unable to derive tangible benefits that a diverse workforce can deliver. The findings show a correlation between the qualitative finding on the industry's decline due to the lack of innovation and the confirmation by the qualitative data that industry leaders found innovation very challenging in the industry. From the findings, there seems to be alignment between the participants strongly agreeing that diversity should be a priority agenda in the South African construction industry and the qualitative data finding that diversity implementation without proper inclusion is not sustainable in the South African construction industry. Table 9.1 is a summary of the top three ranked statements and concepts under each of the constructs as per the quantitative findings and their mapping with the qualitative findings, the emergent themes.

Table 9.1: Summary: Quantitative Ranking and Qualitative Emergent Themes

Diversity			
Qualitative Findings			**Qualitative Findings**
Q#	**Statement**	**Rank**	**Emergent Theme**
026	A diverse construction organisation workforce brings new thinking approaches to the workplace.	1	Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation. Emergent Theme Five: Successful Organisations and Industry Impact.
020	Diversity is important to improve organisational competitiveness and innovation capabilities.	2	Emergent Theme Five: Successful Organisations and Industry Impact.
025	Gender diversity is an important issue that needs focus in the construction industry to ensure that the industry has a diverse workforce to better address the challenges it faces.	3	Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation.
Leadership			
011	The role of leadership in driving diversity in construction organisations is key to improving diversity in the industry.	1	Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation. Emergent Theme Three: Leadership capabilities, Qualities and Personal development
010	Diversity Management must be a leadership initiative, owned and driven by Senior Management namely the CEO and EXCO.	2	Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation. Emergent Theme Three: Leadership capabilities, Qualities and Personal development

Leadership			
Quantitative Findings			Qualitative Findings
Q#	**Statement**	**Rank**	**Emergent Theme**
013	Leadership is a key catalyst for driving innovation through effectively managing diversity in construction organisations.	3	Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation. Emergent Theme Three: Leadership capabilities, Qualities and Personal development
Innovation			
036	Construction industry organisations need to innovate in response to changing customer demands and lifestyles and to capitalise on opportunities offered by technology and changing marketplaces, structures and dynamics.	1	Emergent Theme One: The characteristics of the South African construction industry Emergent Theme Five: Successful Organisations and Industry Impact.
038	Workplace innovation can enhance the profitability of construction industry organisations in South Africa.	2	Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation. Emergent Theme Five: Successful Organisations and Industry Impact.
037	Innovation is an integral key element to the growth and evolution of the South African construction industry.	3	Emergent Theme Five: Successful Organisations and Industry Impact.
The relationship between the three constructs			
031	The relationship between leadership, diversity and innovation and its impact on the South African construction industry's performance and success is an important topic that needs further research and analysis.	1	Emergent Theme One: The characteristics of the South African construction industry. Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation. Emergent Theme Five: Successful Organisations and Industry Impact.
041	This is the first time I am participating in a research study on the relationship between leadership, diversity and innovation in the construction industry.	2	Emergent Theme One: The characteristics of the South African construction industry
042	There is a direct relationship between workforce diversity management and the ability of the workforce to be innovative.	3	Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation.
Level of importance at organisational level			
046	Innovation.	1	Emergent Theme Five: Successful Organisations and Industry Impact.
044	Leadership and organisational diversity through diversity (age, ethnicity and culture, gender, race and capabilities).	2	Emergent Theme One: The characteristics of the South African construction industry. Emergent Theme Five: Successful Organisations and Industry Impact.
049	Integrating diversity management into strategic leadership discussions and decision making.	3	Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation. Emergent Theme Three: Leadership capabilities, Qualities and Personal development.
Level of importance at industry level			
056	Innovation.	1	Emergent Theme Five: Successful Organisations and Industry Impact.
062	Implementing recruitment policies that advance diversity and inclusion.	2	Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation. Emergent Theme Three: Leadership capabilities, Qualities and Personal development
059	Integrating diversity management into strategic leadership discussions and decision making.	3	Emergent Theme Two: Integration and Management of Diverse teams to drive Collaboration and Innovation. Emergent Theme Three: Leadership capabilities, Qualities and Personal development.

9.3 OWNERSHIP AND STRATEGIC DRIVE

There is an increasing awareness of diversity and innovation as initiatives that CEOs consider relevant to their organisations. Senior leaders play a key role in setting organisational cultures and should, therefore, be instrumental in supporting cultural change with a focus on diversity. Presenting diversity and innovation as key strategic issues helps leaders to gain organisational support for such initiatives (Kelan & Wratil, 2018). The quantitative findings show that diversity management must be a leadership initiative owned and driven by senior management, namely the CEO and the EXCO. The participants strongly agreed that leadership is a key catalyst for driving innovation through effectively managing diversity in construction organisations. The qualitative data supported these findings by showing that leaders in the industry should ensure that they have the right capabilities and commitment to effectively manage diversity and innovation. The quantitative results showed that the participants agreed that the South African construction industry is not seen to be promoting diversity, as it continues to predominately attract, employ and promote males and, in particular, white males. Additionally, the quantitative findings depicted indecisiveness among the participants regarding the point of view that in the South African construction industry diversity and diversity management are not regarded as important issues that require focus. This finding alludes to a lack of ownership on these issues, which is substantiated by the semi-structured interview results which indicated a perceived lack of capability, ownership and accountability from leaders in the industry to drive and manage diversity in their organisations.

The qualitative findings revealed that the leaders within the construction industry are more reactive in their approach to managing diversity and innovation, which aligns with the lack of strategic focus. According to the quantitative results, workforce diversity management should be a strategic drive for leadership in the construction industry. This is an interesting finding because it suggests that there is an understanding by the industry workforce that diversity management must be a strategic focus. However, the results from the interviews with the leaders suggest that in practice, this is not the reality due to the challenges and resistance leaders often face in driving diversity and innovation within their organisations. These findings indicate that in the South African construction industry there is a lack of ownership and strategic drive to advance diversity, inclusion and innovation. Consequently, there is a lack of transformation and diversity in the industry. These findings are not different to those of Mathieu *et al.* (2008), Stewart (2010) and Kelan and Wratil (2018) who asserted that the complex and challenging nature of diversity creates discomfort and discussions on

transformation and diversity are often met with much resistance. The workforce of 21st century expects more from their leaders. They require leaders to be more connected and responsive to the issues of diversity and inclusion, not in terms of lip service or feigned action, but with true dedication and sustained commitment. However, leaders have failed to cultivate inclusive work environments that inspire and empower the workforce and foster a sense of engagement and belonging among their employees (Corley, 2020; Kelan & Wratil, 2018; Choi *et al*., 2022).

9.4 LEADERSHIP INFLUENCE AND MANAGEMENT

The role of leadership in the South African industry was assessed with both the questionnaire and through the semi-structured interviews conducted with leaders within the industry. The purpose of the leadership questions on the questionnaire was to assess the views held by the industry workforce about their leaders in influencing, driving and managing diversity and innovation. This study found that diversity management must be an initiative owned and driven by leaders (executive management) in the industry, indicating that the role of leadership in driving diversity is key to improving industry diversity. The qualitative results strengthened this finding with A9, A2, A1 and A23 confirming that leadership has the opportunity to shape how the organisation can move forward embracing innovation and embracing diversity. This study also found that diversity management and innovation are a key strategic leadership agenda and that leadership's management and integration of diversity through workforce diversity management enhances creativity and innovation. The findings further revealed that the role of leadership in driving diversity in construction organisations is key to improving diversity in the industry and that leaders should be held accountable for this through performance KPI'S. These findings are in line with the research and findings of Chin (2010), Latham (2014), McCleskey (2014), Khan *et al*. (2016), Korejan and Shabhazi (2016), Hughes *et al*. (2018) and Kho *et al*. (2020). The findings further revealed that the construction industry is characteristically not a proactive industry and lacks visionary and futuristic leaders that can drive long term strategies (A1, A2, A6, A7, A8, A12, A17 and A18). However, the findings also show a counter opinion indicating that certain sectors of the industry are more proactive than others (A7 and A13). This study further established that transformational and futuristic leadership skills are required to effectively manage the relationship between diversity and innovation in order to achieve organisational and industry success, thus consistent with Sethibe and Steyn (2015) and Kho *et al*. (2020).

The results of this study show that leaders in the industry believed that these issues are difficult, and sometimes uncomfortable, to handle due to their technical focus and that leaders would need to equip themselves with better communication and creative skills A18, A12 and A3 alluded to this in the qualitative interview responses. These findings therefore corroborate with Mathieu *et al.* (2008) and Stewart (2010).

9.5 DIVERSITY, INCLUSION AND DIVERSITY MANAGEMENT

Globally the construction industry is facing significant challenges in attracting, employing and retaining skilled labour, and this labour shortage has been forecasted to worsen. To solve this problem, the industry must look to increasing diversity and inclusion which are therefore important for the future workforce of the construction industry. However, the industry continues to struggle to develop a diverse construction workforce and attract or sustain employees from previously disadvantaged groups (Choi *et al*., 2022). This study found that the construction industry is still male dominated, as more than half of the participants in the questionnaire agreed that the South African construction industry is not promoting diversity management and continues to attract, employ, and promote males, more especially white males. The results from the qualitative phase confirmed this: A18, A19, A14, A16 and A4 stated that the industry is not diverse at all in terms of race, age, and gender. A23 attributed the slow rate of transformation and lack of diversity in the South African construction to its historical background of white male dominance. These findings confirm the CIDB 2021 construction employment monitor report. According to this CIDB report, the construction industry employs 87% males and 13% females and further corroborates previous studies by Dainty *et al.* (2001), Agapiou (2002), Haupt and Smallwood (2004) and Madikizela and Haupt (2010). The results of the study also show that almost all the participants believe that diversity management should be a strategic leadership focus, as was found by Gossen (2016). In relation to diversity being a difficult and uncomfortable conversation to have, this study found that more than half of the participants agreed it was, thus aligning with Matthieu *et al.* (2008) and Stewart (2010).

Furthermore, the results show that the South African construction industry requires a more diverse workforce to address its economic growth and skills shortage challenges. This study also discovered that inclusion is key in driving effective and sustainable diversity management, as was found in the studies by Barak *et al*. (2001), Wallace *et al.* (2014) and Szymanski and Aldighieri (2017).

This study confirmed the work of Van Dijk *et al*. (2012), Patrick and Kumar (2012), Lančarič *et al.* (2015), Dalaine *et al.* (2016) and Aydin and Rahman (2017), as it found that diversity increases and strengthens the interaction between different types of construction disciplines and levels of expertise and improves organisation performance. Diversity, inclusion and effective diversity management are important to improve organisational competitiveness and innovation capabilities. This study also found that despite legislative efforts to increase diversity and inclusion the construction industry remains untransformed (Cottle, 2015; Navarro-Astor *et al.*, 2017; Choi *et al*., 2022). Furthermore, the study found that there is a gender inequality issue in the industry, which is attributed to negative masculine characteristics an industry where only males can thrive and lead (A24, A21, A20 and A10).

9.6 INNOVATION, CREATIVITY, DESIGN AND PROBLEM-SOLVING

This study found that construction industry organisations need to innovate in response to changing customer demands and lifestyles, and to capitalise on opportunities offered by technology and changing marketplaces, structures and dynamics. The results also reveal that innovation is a key element integral to the growth and evolution of the South African construction industry and that workplace innovation can enhance the performance and profitability of construction industry organisations in South Africa. These findings are in line with the findings of Horwitz (2005), Baregheh *et al.* (2009), Gossen (2016) and Dalaine *et al.* (2016). This study confirmed that the construction industry in South Africa is shrinking and struggling to cope under economic pressure because of the lack of innovation in the industry, as stated by Bhorat *et al*. (2016), The Mail and Guardian, October (2020) and Saifaddin Galal (2021). This study further found that innovation leads to successful teams, organisations and ultimately a thriving industry. The findings show that improved creativity and problem-solving can enable the various teams working on construction projects to be more efficient and productive. Furthermore, the results depicted that these improvements could enable the industry to efficiently respond to challenges and improve design processes (A9, A2, A4, A7, A11, A13, A17, A20, A22, A23 and A24). In the qualitative study findings, A23 stated that innovation will enhance the quality of architectural design processes and improve problem-solving in the industry. These findings support those of scholars such as Baregheh *et al.* (2009) and Wallace *et al.* (2014). The findings also revealed a counter-cautionary finding, highlighting the unemployment challenges of the country.

This finding suggested that, in the South African context, although innovation through technology could be good for efficiencies in the industry, it could result in job losses. The results of this study also indicated that the lack of collaboration in the industry had a negative impact on its creative abilities, hindering problem-solving and innovation. In contrast, the results show that there is understanding within the workforce that construction industry organisations need to innovate in response to changing customer demands and lifestyles. Thus, the industry needs to capitalise on opportunities offered by technology and changing marketplaces, structures and dynamics (Smith & Mannucci, 2017; Kim *et al*., 2018; Hughes *et al.*, 2018).

9.7 RECRUITMENT, TRAINING AND RETENTION

A further finding in this study was that proper recruitment processes, training and clear communication are required in order to drive diversity management effectively and sustainably, as was also concluded by Szymanski and Aldighieri (2017), in their study. Emergent theme four indicated that proactive recruitment to ensure organisations are not merely recruiting to meet legislative requirements such as BBB-EE is required for the industry to implement sustainable transformation. The findings show that the industry is not able to retain females in the industry as they do not stay due to the negative characteristics of the industry (A1, A5, A11, A14, A13, A16, A18, A6, A17, A22, A23, A9 and A24). The findings suggested that the South African construction industry is not serious about transformation and diversity. The legislation put in place to advance transformation in South Africa is just a tick-box exercise used in the construction industry to comply with the required recruitment numbers of females and black people. As a result, these groups of employees are being viewed negatively as tokenism, and eventually exit the industry due to the lack of support (Fieldmen *et al*., 1999; Kornergay, 2000; Haupt & Smallwood, 2004; Madikizela & Haupt, 2010; CIDB, 2021). These outcomes are not different to the findings of Caplan *et al.* (2009), Cottle (2015) and Payne (2020). The findings of the qualitative semi-structured interviews show that the South African construction industry has a challenge in attracting and retaining females within the sector, despite efforts to address gender inequality. This finding confirms the findings on the industry's negative characteristics, making the industry unattractive as a sustainable career choice for females (A2, A7, A8, A18, A10, A24, A21, A4, A23 A11 and A5).

The findings further suggested that it is important for the industry to have sustainable training programs and incentives that focus on female retention and diversity management (Dalaine *et al.*, 2016; Baker *et al.*, 2021).

9.8 ORGANISATIONAL PERFORMANCE AND IMPACT ON SOCIETY

The findings of this study suggest that diversity and innovation through effective workforce diversity management will result in improved organisational performance and increase its competitiveness. Furthermore, the results of this study suggest that the positive relationship between diversity management and innovation is significant. Organisations with higher levels of workforce diversity have the potential to generate greater profits from improved design and problem-solving capabilities. This study found that the creativity and innovation boost isn't limited to a single type of diversity. The presence of leaders who are female, collaboration across disciplines within the industry and with other industries or organisations, can result in increased creativity and innovation. However, to reach its full potential and impact on overall organisational performance, diversity needs to go beyond tokenism. This study further demonstrated that diverse organisations have a potential for happier and more committed team members, in particular when workforce diversity management is effective. In organisations where diversity management is effective and driven by leadership, openness to contributions from lower-level workforce and an environment in which the workforce feels free to speak their minds are crucial in nurturing innovation (A9, A2, A4, A7, A11, A13, A17, A20, A22, A23 and A24). Previous studies have also found diversity and innovation to have a positive impact on organisations and improve their overall performance matrices, including financial performance (Webber & Donahue, 2001; Jackson, Joshi & Erhardt, 2003; Horwitz, 2005; Laursen *et al*., 2005; Prieto *et al*., 2009; Dell'Era & Verganti, 2010; Capretz & Ahmed, 2010; Lančarič *et al.*, 2015; Gossen, 2016; Aydin & Rahman, 2017; Suhag *et al.*, 2017; Izadi *et al*., 2020).

The qualitative results of this study show that South African construction leaders believe that the industry should have a significant impact on the economy and society as it employed a large population of the country in it, and it is a major player in infrastructure development in the country. The findings suggest that the construction industry has opportunities to contribute to infrastructure programs, reduce unemployment, and uplift the societies and communities of the country. In their responses A2, A16, A22, A23, A24 and A12 all emphasised the industry's opportunity to contribute by creating jobs and providing building and infrastructure solutions

that uplift and benefit communities and society. This finding shows that these are issues that can impact and change the trajectory of an industry and that are not limited solely to that which originates from within. In contrast, the findings also show that though these opportunities exist the industry requires a more diverse workforce to address its economic growth and skills shortage challenges (A20, A19 and A13).

Furthermore, the findings reflect that the construction industry in South Africa is shrinking and struggling to cope under economic pressure because of the lack of innovation in the industry. The impact of the construction industry on the economy and society corroborates the assertions of Veitch (2020) and Saifaddin Galal (2021).

9.9 LEADERSHIP MEDIATION AND TRANSFORMATIONAL LEADERSHIP

Leadership accountability, especially as it relates to diversity and inclusion, must be 360-degree and multi-dimensional if it is to truly be effective. Lateral accountability mechanisms tend to omit the voices and feedback of a diverse workforce. Traditional leadership governance often reinforces historic, systemic, and institutionalised beliefs and behaviours that contradict truly work inclusive environments (Corley, 2020). The results of this study showed that there is a relationship between workforce diversity management and the ability of the workforce to be innovative, and there is a relationship between leadership's focus on diversity management and the rate of innovation in organisations. These findings are aligned with the studies and findings of Dell'Era and Verganti (2010), Sethibe and Steyn (2015), Kho *et al*. (2020) and Baker *et al*. (2021). Emergent theme two of this study revealed that the successful integration and management of diverse teams to drive collaboration and innovation is critical for the success of the organisation. The mediating role of leaders to ensure that workforce diversity does result in effective workforce innovation was a key finding from the semi-structured interviews. The analysis further showed that the role of leaders in purposefully curating the teams to be diverse is important. People from different backgrounds have different experiences and opinions. Therefore, improved efficiencies, creativity and innovation could be achieved through leadership mediation harnessing those differences (A22, A1, A9, A2, A4, A23, A24, A16, A19, A13 and A11) as shown in figure 9.2. The qualitative findings further depicted that the leadership capabilities required to effectively integrate and manage the relationship between workforce diversity and workforce innovation are visionary and transformational leadership abilities and qualities (Li, Guo & Wan, 2019).

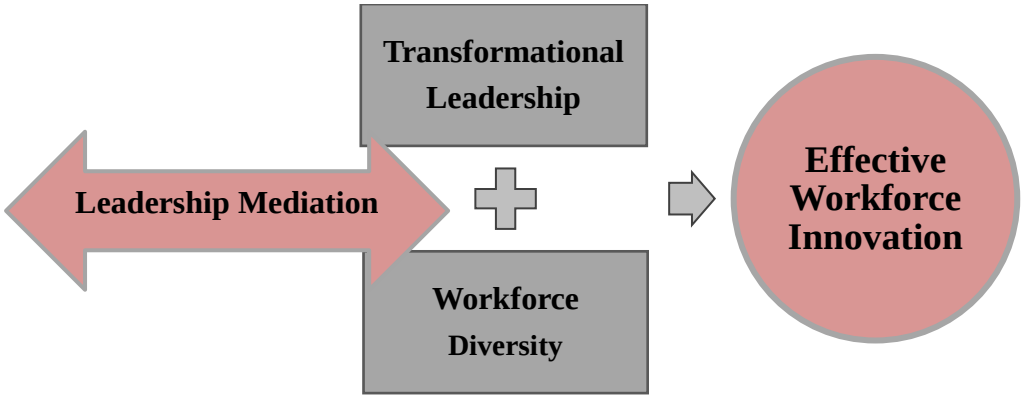


Figure 9.2: Mediation relationship between diversity, leadership and innovation

9.10 THE FRAMEWORK TO ARTICULATE THE MEDIATING INFLUENCE OF LEADERSHIP ON THE RELATIONSHIP BETWEEN DIVERSITY AND INNOVATION

The results of the study show that issues of diversity, inclusion, leadership and innovation and their relationship to each other are important topics in the South African construction industry that need to be addressed through further research. According to Ansari *et al*. (2016), a growing body of research has linked productive organisational processes and outcomes, such as group performance, creativity, and problem-solving with a diverse workforce. Madikizela & Haupt (2010), Ayub *et al.* (2013) and Choi *et al.* (2022) further state that diversity is a critical issue in globalisation and competitiveness of institutions and corporate entities. Diversity has been a topic that has been researched extensively in the humanities fraternity particularly in relation to academia and human resources. Dalaine *et al.* (2016) found that the role of diversity and inclusion in engineering education and practice has gained prominence in recent years since engineers are facing an increased need for global collaboration when working in highly diverse teams and within different cultures. These results support Chin (2010)'s research on theories of leadership which found that leadership theories need to be expanded to incorporate diversity if they are to be relevant for the 21st century, which further supports the assertions of Aarons (2006), Latham (2014) and Korejan and Shabhazi (2016) on the importance of further in-depth research on these topics. Research objective six of this study was to: *Develop a framework to articulate the mediating influence of leadership on the relationship between diversity and innovation to drive better inclusive societal infrastructure problem-solving in the South African construction industry.*

This framework was developed to unpack and understand the pertinent findings of this study and demonstrate these in a clear graphical manner towards the achievement of the research objectives. The purpose of this framework is to provide outputs framed from the results of this study which can be used for further research development or as workshop tools to guide dialogue for the leaders in the industry. It also aims to identify solutions and practical applications in addressing the challenges associated with effectively mediating these complex issues. The study revealed that the relationship between diversity and innovation can be challenging for leaders in the South African construction industry to tackle. Figure 9.3 is a depiction of the pertinent outcomes from the findings of this study in relation to their positioning at organisational levels within the construction industry, and further shows their relation to the research propositions.

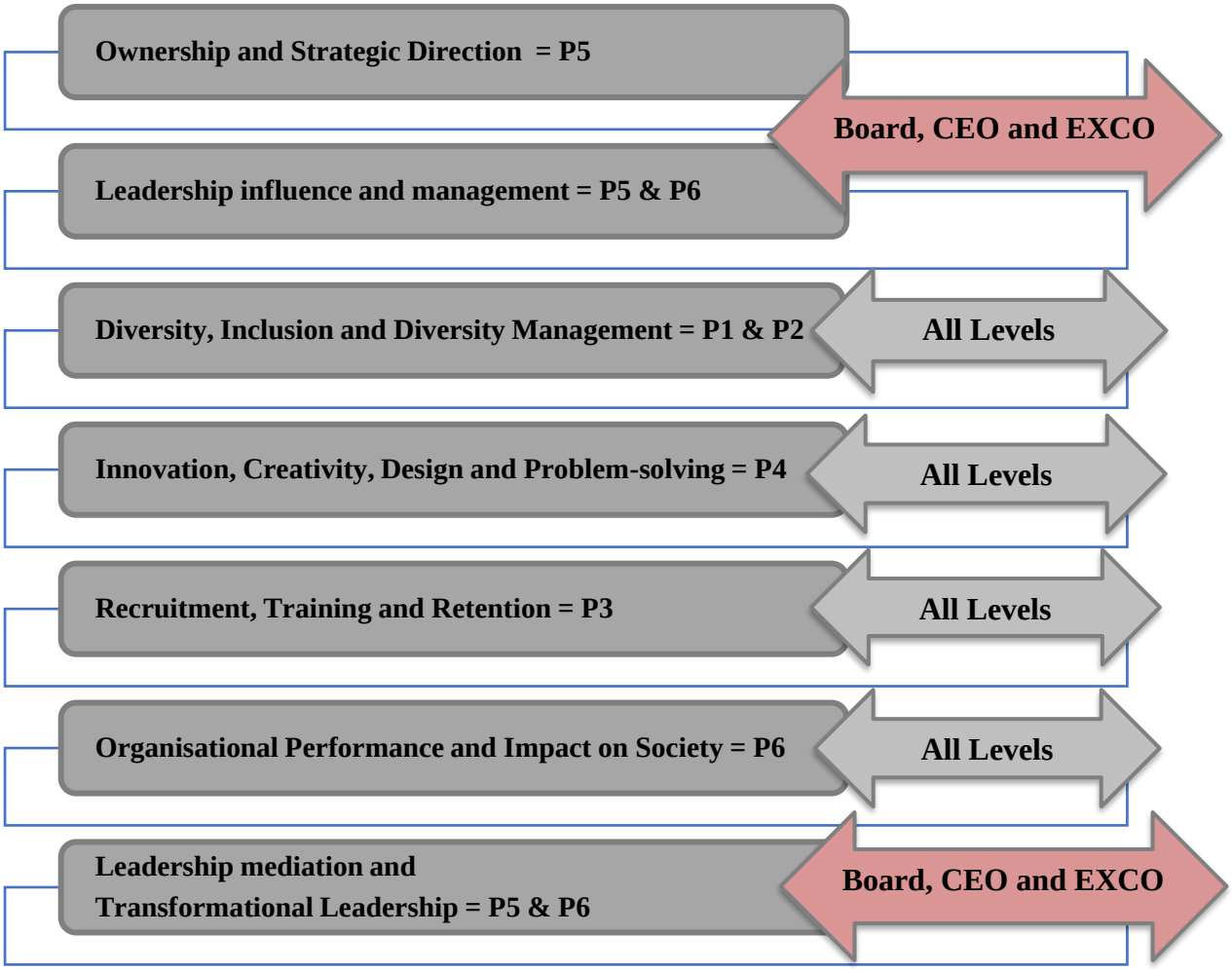


Figure 9.3: Findings: their organisational positioning and link to the research propositions

Please see below the propositions shown in relation to the conceptual framework of the study:

P1: There is a direct relationship between the lack of diversity in the South African construction industry and its rigid, negative, and untransformed characteristics.

P2: There is a direct relationship between the South African construction industry's inability to effectively respond to economic and transformational challenges and the lack of diversity in the industry.

P3: There is a direct relationship between the South African construction industry organisations' unwillingness to recruit from all demographic categories and the lack of diversity and innovation in the industry.

P4: There is a relationship between the ability of heterogeneous organisations to outperform homogeneous organisations on problem-solving, creativity and innovation and the lack of diversity in homogeneous organisations.

P5: There is a relationship between the success of heterogeneous organisations and transformational leadership and commitment to effectively manage diversity and a diverse workforce.

P6: There is a clear relationship between the South African construction industry's leadership ability and commitment to drive and manage diversity and innovation and organisational performance.

9.10.1 The key components of the mediation framework

The key components of the framework to the mediating influence of leadership on the relationship between diversity and innovation are, leadership, diversity, diversity management, and innovation. Leadership is the cornerstone of this framework because leaders need to own and drive these components. The findings of this study highlighted the criticality of leadership in ensuring that diversity and innovation contribute positively to organisational performance and success.

Therefore, it is imperative that the starting point of this framework is construction industry leaders and finishes with workforce innovation. These are depicted in Figure 9.4. and the detail and outputs of these are presented in Table 9.2.

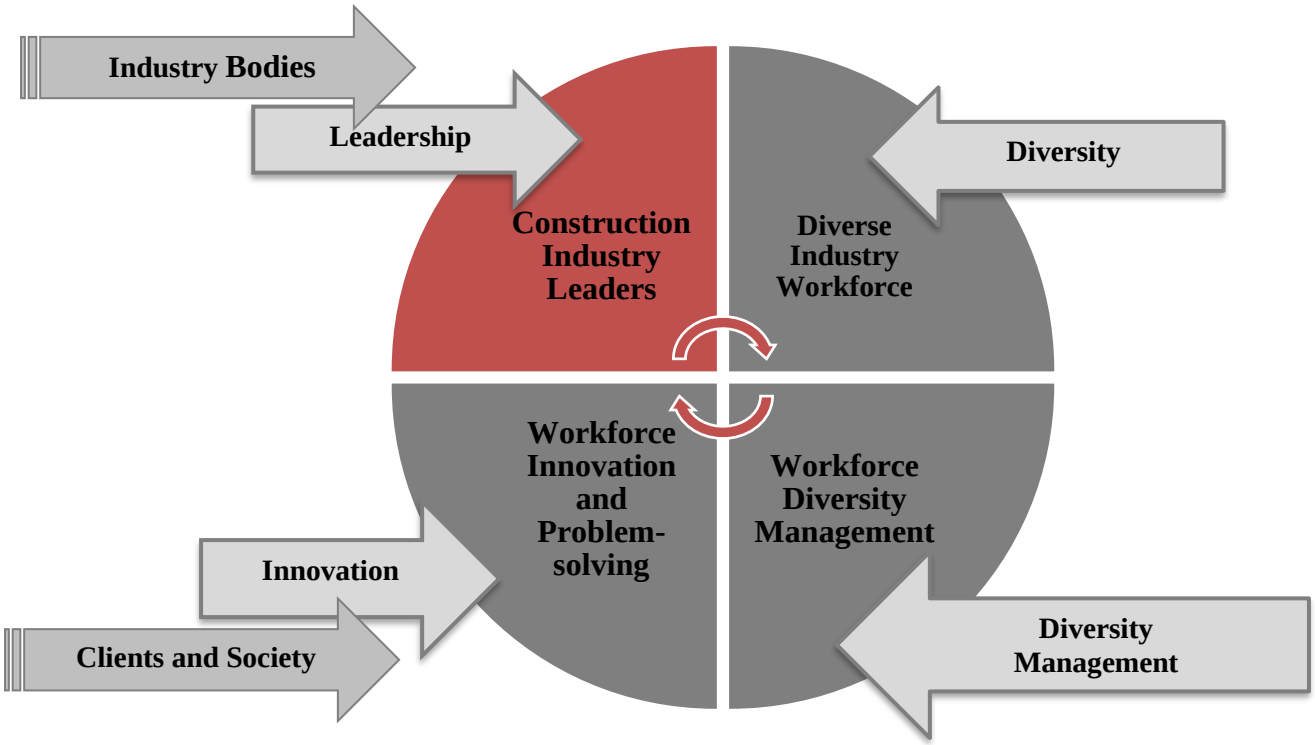


Figure 9.4: Key Components of the of the mediation framework

Table 9.2: Leadership Mediation Framework Key Components

Leadership Mediation Key Components		
Leadership		
The Players	**The Outputs**	**Tools and Platforms**
Construction Industry Organisational Leaders	Ensure that they have the right capabilities and qualities to drive, influence and manage diversity and innovation. develop the appropriate training and upskilling programs to develop and grow the required leadership qualities needed in the industry. Include leadership development as a key strategic agenda at board level in organisations. Engage and learn from other industry leaders. Engage industry bodies to garner support. Engage the workforce to gain a better understanding of how they experience their leadership. Provide ethical and inclusive leadership.	Business School Leadership programs Industry specific intensive leadership programs Workshops Colloquiums International Conferences Board and EXCO agendas Policies Performance evaluations
Construction Industry Workforce	The construction industry workforce are the beneficiaries of leadership with limited outputs. They must ensure they provide the necessary feedback to leaders to hold them accountable.	Workshops Performance Evaluations

Leadership Mediation Key Components		
Leadership		
The Players	**The Outputs**	**Tools and Platforms**
Construction Industry Bodies	Industries bodies also play a leadership role in the industry and would have similar outputs to the organisational leaders. Ensure that there is alignment within the industry on leadership initiatives. Ensure that industry specific leadership policies are relevant. Hold the organisational leaders accountable for effective and ethical leadership.	Policies Industry Charters Conferences Industry performance Scorecards
Clients and Society	As beneficiaries and employers of the industry organisations, they must hold the industry accountable for good leadership. Clients must provide guidance in their procurement policies on the leadership qualities they need from the industry.	Procurement policies Community liaison platforms
Diversity		
Construction Industry Leaders	Take ownership of driving and implementing diversity. Have diversity as strategic agenda. Develop and implement diversity strategic plans. Have a diversity policy to support the strategy implementation. Enable open dialogue about diversity or the lack thereof. Engage the workforce on diversity regularly. Set and implement recruitment targets to drive diversity. Ensure that diversity becomes an organisation philosophy. Hold Team leaders and Managers accountable for driving diversity at the levels within the organisations.	Diversity Strategy and Polices Diversity as an agenda at Board and EXCO meetings KPI's Employment contracts Recruitment policies
Construction Industry Workforce	Encourage diversity in their teams Engage with leaders on diversity issues within their teams and projects.	Projects Project team meetings Workshops
Construction Industry Bodies	Implement stricter measures to hold organisations accountable Ensure that there is collective alignment among the various bodies on diversity.	Scorecards Ranking Criteria
Clients and Society	Clients to hold organisations accountable to ensure that teams on their projects are diverse.	Procurement policies Contract agreements
Diversity Management		
Construction Industry Leaders	Take ownership of driving diversity management. Establishing a diversity management plan. Establishing recruitment programs in line with the diversity management plan. Integrating workforce diversity and workforce innovation. Putting diversity management as a strategic objective. Appointing a diversity manager where necessary. Putting together training and development programs to retain females in the industry. Driving collaboration. Establishing diversity communication sessions. Investing in diversity training. Curating diverse teams through deliberate recruitment programs.	Organisational Strategy Plans Balance Score cards Workshops Training programs Whistle blowing platforms Construction Site Training Human Resources Recruitment policies
Construction Industry Workforce	Active participation in diversity training programs. Influencing and partaking in recruitment processes. Engaging and holding leaders accountable on the strategy plans. Participating in collaboration sessions.	Team meetings
Construction Industry Bodies	Partnering with and engaging organisations on diversity management plans. Providing incentives and hosting industry workshops on diversity management Hold organisations accountable for implementing diversity management plans.	Quarterly newsletters Organisation visits and construction site visits Scorecards
Clients and Society	Clients to hold organisations accountable to implement and maintain effective diversity management on the projects.	Contract agreements Project progress meetings
Leadership Mediation Key Components		

Diversity Management		
The Players	**The Outputs**	**Tools and Platforms**
Innovation		
Construction Industry Leaders	Take ownership of driving innovation within the organisations Have innovation as strategic agenda Develop and ensure the succession implementation of an innovation strategy Have an innovation policy to support the implementation of the strategy Ensure that innovation is included in the Board and EXCO agendas Develop and implement an innovation balance scorecard to measure the success. Curate and create a learning organisation to encourage innovation at all levels in the organisation. Hold the workforce accountable for bringing new ideas to the table through relevant KPI's Ensure that innovation becomes an organisational philosophy. Collaborating with leaders in other industries. Effectively integrating workforce diversity and workforce innovation.	Innovation Strategy and Policies. Innovation centers Collaboration Workshop Innovation competitions Innovation training programs
Construction Industry Workforce	Actively participate in innovation collaboration sessions. Have Innovation as a KPI and part of employment contract. Demonstrate creative thinking in problem-solving. Participate in training programs. Actively engage with teams outside their disciplines and industry. Attend and present at conferences and colloquiums.	Workshops Collaboration with other teams Lunch and learn sessions Innovation competitions Innovation training programs
Construction Industry Bodies	Host innovation Hubs. Run Industry Innovation Competitions. Fund innovation construction pilot projects. Host creative problem-solving sessions. Interact with other industry bodies such as Manufacturing to get new ideas. Collaborate with universities and host interuniversity innovation competitions.	Competitions Strategy and Policies Scorecards Budgets and Funding
Clients and Society	Clients must ensure that innovation and creative problem-solving is a contractual obligation and provide performance incentives for these. Society is a benefactor of innovation and can hold organisations accountable by interacting with government and industry bodies.	Contracts Performance bonus incentives Government incentives Budgets

9.11 A SYNOPSIS OF THE MEDIATION FRAMEWORK

Figure 9.5 is the holistic diagrammatic depiction of the framework to articulate the mediating influence of leadership on the relationship between diversity and innovation. In this mediation framework the construction industry leaders are the owners of this process and a constant engagement point at each of the process points. In this framework it is envisioned that the industry bodies, clients and society should have role to play tough not significant, their outputs are detailed in Table 9.2. Industry bodies such as CBE should provide input on the regulations and guidelines of the industry. However, this framework proposes that it is the organisational leaders who should own this mediation process and ensure implementation.

South African construction leaders should drive and make this relationship a strategic drive within their organisations. Table 9.2 shows the mediation platforms that can used by leaders

for regular engagement on these issues, could be workshops, conferences, colloquiums, hosting lunch and learn sessions in the workplace. Industry bodies could be used to host industry wide collaboration sessions within industry or with other industries. The model is not prescriptive on the platform that a leader would choose to use, only that there must be leadership ownership and regular leadership engagement on these issues. One of the findings of this study is that leaders should be held accountable for the effective management of these elements through KPI's. Hence, this framework could be one of the tools used to measure their effectiveness. The framework, depicted in figure 9.5 is the output in accomplishment of objective 6 of this study.

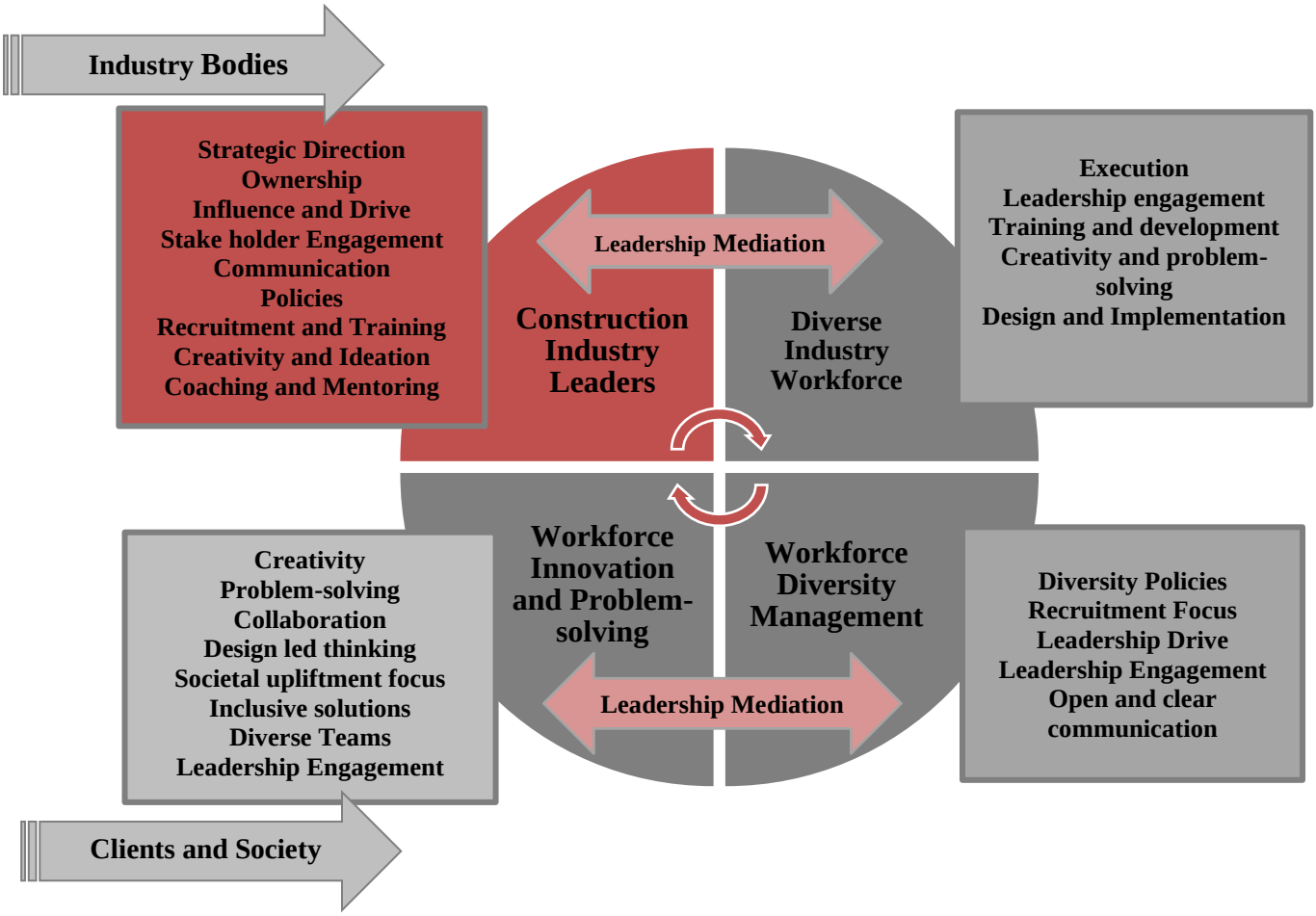


Figure 9.5: The Mediation Framework for the relationship between diversity, leadership and innovation.

9.12 SUMMARY OF THE CHAPTER

This chapter provided a detailed discussion of the findings in this study by contributing further insights into the pertinent issues emanating from the questionnaire and semi-structured

interviews. The findings outlined in this chapter showed that that there is a relationship between leadership's ability to drive, influence and manage the relationship between diversity and innovation for successful organisational and industry performance. This chapter also addressed research objective no six of this study and provided a framework articulating the mediating influence of leadership on the relationship between diversity and innovation to advance organisational performance in the South African construction industry. The following and final chapter of this study will provide the summary, conclusions and recommendations of this study.

CHAPTER TEN:
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

10.1 INTRODUCTION

This chapter summarises the key research findings of this study and specifies the level to which the research objectives have been addressed, conclusions are drawn and contributions to body of diversity, innovation and leadership knowledge are presented. The research limitations are outlined, and relevant recommendations based on findings and conclusions are provided and the areas for future research are suggested.

This study evaluated the relationship between leadership, diversity and innovation and the impact of leadership's drive and influence in successfully managing these to advance organisational performance in the South African construction industry. To answer the main research question of this study which was "*How does leadership drive, influence and manage the relationships between leadership, diversity, and innovation to drive organisational performance and provide solutions to societal infrastructure challenges in the South African construction industry?"* This study used a series of research processes, starting with a literature review of the main constructs of this study which are diversity and diversity management, inclusion, leadership and leadership diversity, innovation and innovation management, the relationship between these constructs in the South African construction industry. Through the literature review the concepts of workforce diversity, workforce diversity management, diversity management, inclusion, leadership diversity, transformational leadership, innovative solutions, and workforce innovation were identified. These concepts were the foundation on which the research questions and propositions were derived from.

The convergent parallel mixed method was adopted to collect and analyse the data. The quantitative (questionnaire) and qualitative (semi-structured interviews) approach was implemented concurrently to answer the research questions and collect the data. The quantitative data collected was exported from the Survey Monkey digital tool to the SPSS 27 software and analysed using descriptive, inferential and probability tests. The qualitative data was thematically analysed using the NVivo 12 software.

10.2 RESTATING THE AIM AND OBJECTIVES OF THE STUDY

This study aimed to investigate and analyse the role of leadership in managing the relationship between diversity leadership and innovation in the South African construction industry and its impact on the industry's ability to advance organisational performance. The research aims to add to the South African construction industry's body of knowledge on diversity, diversity management, leadership diversity and capabilities and innovation. The objectives that were applied to achieve this study are:

Research objective 1: Investigate the perceptions on the level of importance assigned to diversity and inclusion, leadership, and innovation held by the workforce and leadership within the construction industry in South Africa.

Research objective 2: Analyse the perceived lack of leadership diversity within the South African construction industry, and how this impacts the management of the relationship between diversity and innovation in the South African construction industry.

Research objective 3: Investigate the extent to which the workforce and leadership within the construction industry view the importance of diversity and inclusion to drive innovation for better problem-solving and organisational performance within their organisations and the construction industry.

Research objective 4: Evaluate the link between leaderships' drive, influence, and management of the relationship between diversity and innovation to inclusive innovative problem-solving within the construction industry.

Research objective 5: Determine the relationship between the South African construction industry leaderships commitment to diversity and innovation with the industry's impact on the South African economy and society.

Research objective 6: Develop a framework to articulate the mediating influence of leadership on the relationship between diversity and innovation to advance organisational performance in the South African construction industry

10.3 SUMMARY OF THE RESEARCH FINDINGS

This section provides a summary of the key findings that emerged in relation to the research objectives of this study:

10.3.1 Objective 1

> *Investigate the perceptions on the level of importance assigned to diversity and inclusion, leadership, and innovation held by the workforce and leadership within the construction industry in South Africa.*

To meet this objective the quantitative questionnaires were used to understand the perceptions on the industry workforce on the importance of the constructs in this study. The interviews went further in ensuring that the depth of information associated with this objective emerged within the discussion. This study found that the workforce and leadership in the construction industry viewed diversity and inclusion, and innovation and their relationship to each other, as important topics in the South African construction industry that need to be addressed through further research and understanding. Furthermore, this study found all of these issues to be very important at both organisational (micro/meso) level and at the industry (macro) level. Therefore, they are not just isolated to industry organisations but have an industry wide impact. The findings revealed that the perceptions of the construction industry workforce and the leaders are that innovation is the most important of these constructs as it was ranked 1st and with the highest mean score (1.79) at both the organisation and industry level.

10.3.2 Objective 2

> *Analyse the perceived lack of leadership diversity within the South African construction industry, and how this impacts the management of the relationship between diversity and innovation in the South African construction industry.*

This study confirmed that there was a lack of leadership diversity as the industry continues to be dominated by males, in particular white males, and that despite legislative attempts to drive transformation in the South African construction industry it is still characterised by the lack of transformation, lack of diversity, rigidity and resistance to change. The quantitative results showed that the participants agreed that the South African construction industry is not seen to be promoting diversity as it continues to predominately attract, employ, and promote males and in particular white males (0.75). The findings revealed that promoting diversity was not perceived as important in the industry as the statement was ranked 12th out of the 16. From the

findings it would seem that diversity understood to be important to improve organisational competitiveness and innovation capabilities. The findings show that the participants agreed that leadership should drive the management of the relationship between diversity and innovation in the construction industry. Additionally, the quantitative results show that there is a direct relationship between leadership's focus on diversity management and the rate of innovation in organisations, the participants agreed (1.04), though this statement was ranked the lowest at 4th. The quantitative findings did not reveal the perceptions on the impact of the lack of leadership diversity on management of the relationship between diversity and innovation. Therefore, it can be concluded, that the quantitative results do not fully address the perceptions lack of leadership diversity and its impact, however they confirmed that is lack of diversity in the industry, as the participants agreed the South African construction industry is still a male dominated; particularly white male dominated industry (1.21). The qualitative finding did reveal the perceptions of the lack of leadership, and they indicated that diversity and inclusion are still seen as a threat among leaders in the South African construction industry and are often met with resistance in the forms of both passive and deliberate resistance, these were reflected in the responses of A23, A8, A2, A16 and A9 (see section 8.3.1.4). The findings further showed that there is less resistance to change for lower-level roles, and more resistance to transforming the leadership, as reflected by A21 and A8. The qualitative findings revealed that the lack of leadership diversity impacts the strategic decisions that get made and, therefore, impacts the management of the diversity and innovation (A21).

10.3.3 Objective 3

> *Investigate the extent to which the workforce and leadership within the construction industry view the importance of diversity and inclusion to drive innovation for better problem-solving and organisational performance within their organisations and the construction industry.*

The data revealed that diversity and inclusion, and the effective management of these through diversity management and workforce diversity management, were considered critical for driving innovation for better problem-solving and organisational performance. This view was shared by the construction industry workforce and leadership alike. The quantitative findings show that the participants strongly agreed (1.42) that diversity such as age, ethnicity and culture, gender, race, and capabilities is critical for driving organisational success in the industry.

There was strong agreement (1.51) that diversity is important to improve organisational competitiveness and innovation capabilities. A diverse construction organisation workforce brings new thinking approaches to the workplace, was ranked the most important (1) with a mean score of 1.55. Furthermore, the quantitative findings showed that diversity increases and strengthens the interaction between different types of construction disciplines and levels of expertise. The qualitative emergent theme five, section 8.3.5.1 on successful organisations shows that diversity and inclusion improve organisational performance, and that diversity, inclusion and innovation will positively influence the culture in organisations and improve their outputs. This will improve the image of the construction industry and make it the industry of choice.

10.3.4 Objective 4

> *Evaluate the link between leaderships' drive, influence, and management of the relationship between diversity and innovation to inclusive innovative problem-solving within the construction industry*.

This study shows that there was a direct link between leaderships' drive, influence, and management of the relationship between diversity and innovation within the construction industry. The quantitative findings showed that there was agreement (1.08) that there is a direct relationship between workforce diversity management and the ability of the workforce to be innovative. There is a direct relationship between leadership's focus on diversity management and the rate of innovation in organisations (1.04). The participants strongly agreed (1.38) that leadership is a key catalyst for driving innovation through effectively managing diversity in construction organisations. There was a strong agreement (1.37) that leadership's management and integration of diversity through workforce diversity management enhances innovation in construction organisations. These findings indicate that there is a strong link between leaderships' drive, influence, and management of the relationship between diversity and innovation. However, the quantitative findings do not directly link this relationship to improved problem-solving. The qualitative findings indicated that through diversity and innovation there would be an improvement in problem-solving and in the design processes. Qualitative findings under theme five, section 8.3.5.1 collaboration, show that a benefit of having a diverse workforce and effective diversity management would be better cognitive thinking and problem-solving.

10.3.5 Objective 5

Determine the relationship between the South African construction industry leaderships commitment to diversity and innovation with the industry's impact on the South African economy and society.

The qualitative findings under theme five, determined that there was a relationship between the commitment of industry leadership to diversity and innovation and the industry's impact on the South African economy and society, as it was found that the industry made a significant contribution to the country's GDP, employment and infrastructure and had capabilities and further opportunities to positively impact the South African economy and society. The quantitative findings showed agreement (1.37) that the South African construction industry requires a more diverse workforce to address its economic growth and skills shortage challenge. Although this finding is not explicit, it does allude that, in order for the industry to respond to economic challenges, it would impact the economy as it would provide employment. The findings further suggest that the construction industry in South Africa is shrinking and struggling to cope under economic pressure because of the lack of innovation in the industry (0.64). The qualitative findings revealed that to drive more innovative solutions, the industry must see itself as an agent of change and get involved with the country and its problems. When the industry starts solving societal and national challenges, it will drive more innovative solutions. The data indicated that the industry is far more likely to achieve breakthrough innovations that can impact society when it has diverse teams; (these were discussed in section 8.3.5.3).

10.3.6 Objective 6

Develop a framework to articulate the mediating influence of leadership on the relationship between diversity and innovation to advance organisational performance in the South African construction industry.

Based on its findings, this study developed a leadership mediating framework for the relationship between diversity and innovation, as the findings determined that there was a gap in leadership's drive and management of these. The development of the framework is presented in Chapter 9 and its development progression is shown in in Figures 9.1 to 9.5, and tables 9.1 to 9.2. The framework is not prescriptive on the platforms to be used for engagement but strongly proposes that in order to be effective it must be owned and driven by leadership.

The key components of the framework to the mediating influence of leadership on the relationship between diversity and innovation are, leadership, diversity, diversity management and innovation.

10.4 ANSWERING THE MAIN RESEARCH QUESTION

How does leadership drive, influence and manage the relationship between diversity and innovation to advance organisational performance in the South African construction industry?

The current South African construction industry leadership landscape is fragmented and weak, without a clear and aligned strategic organisational and industry direction on the issues of diversity, inclusion and innovation. It is interesting that these issues are regarded as very important issues that need proper attention from leadership within the industry, among the workforce and leaders alike. However, there is not enough dialogue on these issues at organisational and/or industry level to ensure that these are effectively managed. These findings suggest that currently in the South African construction industry, leadership does not proactively drive, influence or manage the relationship between diversity and innovation to advance organisational performance. Therefore, they drive the relationship in a reactive manner, responding to legislative and economic pressures.

The positive outcomes are that the leaders who were interviewed acknowledged that there are leadership capability challenges in the construction industry that require focus. This outcome arose from emergent themes one, three and four. These findings show that there was an understanding of the need to equip leaders in the South African construction with the appropriate skills to effectively manage issues of diversity, inclusion and innovation. It was identified that these capabilities and skills are currently lacking in the industry as they depend more on cognitive skills than on technical skills. The main challenges confronting the South African construction leaders, were to be found in the transformational leadership style theory. These are, clear and honest communication, inspirational and motivational skills, the ability to think futuristically and provide a clear vision, pulling teams together for a greater collective common good. These leadership skills challenges result from the traditional nature of managing in the construction industry. Therefore, the answer to the main research question is that there is a need for significant change in leadership focus and style and to develop the capabilities of leaders in construction industry organisations. Addressing these needs will enable leaders to proactively drive, influence and manage the relationship between diversity and innovation to advance organisational performance in the South African construction industry.

10.5 RE-EXAMINING THE PROPOSITIONS OF THIS STUDY

There were six research propositions formulated to answer the research question and address the research objectives of this study.

10.5.1 Proposition 1

> *There is a direct relationship between the lack of diversity in the South African construction industry and its rigid, negative, and untransformed characteristics.*

The findings of this study showed that the construction industry is characterised by a lack of transformation, rigidity and negativity and that there is a direct relationship between these characteristics and the lack of diversity in the South African construction industry. Therefore, this proposition is supported by the findings in this study.

10.5.2 Proposition 2

> *There is a relationship between the South African construction industry's inability to effectively respond to economic and transformational challenges and the lack of diversity in the industry.*

The study found that the lack of transformation, diversity and leadership diversity in the industry has a direct relationship with its inability to effectively respond to economic and transformational challenges. These findings support this proposition.

10.5.3 Proposition 3

> *There is a direct relationship between the South African construction industry organisations' unwillingness to recruit from all demographic categories and the lack of diversity and innovation in the industry.*

The findings of the study revealed that the South African construction industry continues to attract and retain predominately white males into the industry, and this contributes to the lack of diversity, transformation and innovation in the industry. This outcome supports the proposition.

10.5.4 Proposition 4

> *There is a relationship between the ability of heterogeneous organisations to outperform homogeneous organisations on problem-solving, creativity and innovation due to the lack of diversity in homogeneous organisations.*

The findings of this study showed that there is a relationship between the industry's lack of diversity and their inability to respond to the economic challenges it faces, and that diversity and inclusion are critical in the industry to drive better innovation and problem-solving. Furthermore, the results showed that diverse teams and leadership are critical to the success of originations. Though these findings do not directly address the ability of heterogeneous (diverse teams) to outperform homogenous (non-diverse teams), they support the proposition that homogeneous teams struggle with innovation and heterogenous teams are key to successful construction industry organisations and improved innovation and problem-solving.

10.5.5 Proposition 5

> *There is a relationship between the success of heterogeneous organisations and transformational leadership and commitment to effectively manage diversity and a diverse workforce.*

The results of this study confirm that there is a relationship between leadership's influence and drive of diversity, and the success of the organisation, this study further established that there is a need for transformational leadership in the industry to drive effective management of the changes in the industry and for the success of the organisations. Furthermore, the study found that it is essential for leaders to effectively drive and manage diverse teams in order to ensure that diversity contributes to the success of the organisations. Based on these findings this proposition is supported.

10.5.6 Proposition 6

> *There is a clear relationship between the South African construction industry's leadership ability and commitment to drive and manage diversity and innovation and organisational performance.*

The study found that there is a relationship between leadership's ability and commitment to drive and manage diversity and innovation, and organisational performance. It further established that when leaders are committed to driving and managing diversity and innovation, organisational performance is enhanced. Therefore, this proposition is supported by these findings.

10.6 CONCLUSIONS

Based on the findings of the study the following conclusions were drawn:

- Diversity and inclusion, leadership and innovation are important and relevant issues that impact the success of the organisations within the South African construction industry, and they further have an impact on the industry as a whole. However, even though these are important, there is a lack of proper and effective dialogue about these issues and how they impact the ability of the industry to positively contribute to the country's economy and provide inclusive innovative solutions for the advancement of organisational performance.
- Leadership within the South African construction industry is still untransformed and, therefore, the drive for a more diverse, inclusive and innovative workforce is not receiving the attention and priority it should be getting in the industry. Furthermore, these leaders are reluctant to have the uncomfortable conversations that are required to drive the necessary change in the industry, because they find these issues daunting and uncomfortable. They further find themselves lacking the skills and capabilities to effectively drive and manage these issues.
- The negative image, the rigidity and resistance to change characteristic of the industry means that the industry is not open to new ideas and to learning from other industries, thus rendering it unopen and uncollaborative. This hinders the ability of the industry to come up with new ideas and ways of working to embrace transformation and diversity.
- The positive outcome is that the industry has had an increase in the number of females that enter it. However, it struggles to retain them due to the negative characteristics it presents as well as the lack of opportunity for them to take on senior and executive leadership roles in the industry.
- Innovation in the South African construction industry is not progressing because of the views that the industry has of what innovation means. The industry has mainly been focusing on technology as innovation and, thus, not has not found it fit for purpose. This narrow view of innovations diminishes the industry's ability to see problem-solving and creative solutions as innovation.
- At the lower levels of the construction industry, the organisational workforce is diverse, young and energetic, full of ideas. However, they do not last beyond five years because of the generational gap between them and their managers and leaders, and the manner in which they are managed and led is stifling and rigid. This leads to a perpetuated untransformed industry that lacks diversity.

- Leaders in the South African construction industry have not had any further development focus post their technical qualifications and experience. Though these skills are often adequate to complete and manage construction projects, they are not adequate for such complex issues. They, therefore, lack the required general and transformational leadership skills to effectively engage with, influence, drive and manage diversity, inclusion and innovation.
- The South African construction industry has not been able to contribute and play the pivotal role that it should in the country by contributing positively to societal upliftment through sustainable job creation and providing tangible inclusive solutions to the infrastructure challenges it faces.

10.7 CONTRIBUTION TO THE BODY OF KNOWLEDGE

This study's main contribution is to the body of knowledge on diversity and inclusion, leadership and innovation. It makes the following specific contributions:

- The study contributes to the further understanding of diversity and inclusion through an extensive review of global literature on these issues and how they impact industries and organisations within those industries. The review of the literature revealed a gap in extant literature specific to the construction industry in Africa and South Africa. This literature showed that the challenges that most industries face related to diversity and inclusion are due to the lack of leadership focus and commitment to driving, influencing and managing these.
- The study also reviewed global literature on leadership and innovation and found the same vacuum of significant extant literature on these issues specific to the construction industry in African and South Africa. This review revealed that it was important for Africa and South Africa to start defining their own innovation theory and definition relevant to the context of its societies and communities which have very unique challenges to the rest of the world and therefore this study contributes by providing that basis for South Africa's own understanding and literature on these issues.
- Through its findings, this study contributes by providing knowledge on the challenges the industry leaders face in driving, influencing and managing diversity, inclusion and innovation and how they impact the industry's workforce and the society. This knowledge can be used to develop practical solutions on how to resolve these challenges and create opportunities for enhanced growth, transformation and diversity in the industry.

- Through the in-depth evaluation of the industry leaders' views, perceptions, understanding, engagement and management of the issues, it provides further knowledge on the capabilities and attributes required in leadership roles in the South African construction industry. From this knowledge proper theory and literature on leadership developmental programs specific to the South African construction industry can be developed and implemented.
- The leadership mediation framework conceptualised in chapter 5 of this study, further developed from the findings presented in chapters 7 and 8 and detailed in chapter 9, is a significant contribution to the construction industry's body of knowledge on diversity, leadership and innovation. Furthermore, it contributes to the knowledge on the challenges, and the required capabilities and opportunities for the effective management of the relationship between diversity, leadership and innovation to advance organisational performance in the South African construction industry.

10.8 CONTRIBUTION TO CONSTRUCTION INDUSTRY PRACTICE

This study's main contribution to the construction industry practice on managing the relationship between diversity and inclusion, leadership and innovation, is the developed leadership mediation framework detailed in chapter 9. It makes the following specific contributions:

- The leadership mediation framework developed and presented in this study is a practical contribution as this is the starting point for equipping the leadership in the industry with a process that could be used to improve on their ability to drive, influence and manage these issues, through framed mediation platforms and leadership engagement points.
- The findings of this study provide knowledge that construction industry bodies and leaders can use in developing policies and strategies on how leaders can effectively use the concepts of diversity management, workforce diversity management and workforce innovation to improve their organisational performance and drive better innovation and problem-solving to provide inclusive innovative solutions to infrastructure challenges for the industry and the country.
- The findings from this study can practically assist organisations and their leaders to properly package the findings as training and development manuals for their workforce and leaders.

- The findings and the mediation framework can be used as input for industry leaders to develop their own diversity management and innovation management framework strategies or policies to implement in their organisations.

10.9 RECOMMENDATIONS

Based on the outcomes and conclusions of this study, the following recommendations are made to the industry bodies, organisational leaders, the workforce and academic institutions on strategies and actions towards improving the industry:

10.9.1 Recommendations to industry bodies:

- Statutory bodies must become more than just regulatory enforcing entities and must start having more open conversations with all the stakeholders in the industry on these specific issues and create better dialogue on these.
- The industry bodies must also hold leaders within the organisation more accountable for providing inclusive innovative solutions.
- Furthermore, industry bodies need to come together as one on a regular basis, to reduce the fragmentation that currently exists which results in the lack of ownership.
- The industry needs to learn and collaborate with other industries, to enable and create cross industry think tank sessions.
- Create innovation hubs for creativity and problem-solving and run competitions to drive participation and improve innovation in the industry.
- Increase funding available for creative projects in the industry.
- Universities to start strongly encouraging engineering and built environment students to take courses in the fine arts and humanities departments to increase their creative and cognitive skills.
- The industry should define what innovation means for South Africa and its contextual landscape.

10.9.2 Recommendations to organisational leaders:

- Start incorporating diversity and inclusion, leadership engagement and innovation in annual strategic plans and establish policies to support these.
- Develop measurable key company objectives and key performance indicators (KPI's) that are well captured in leaders' performance balanced scorecards (BSC) that are focused on

these elements and measure them quarterly to hold leaders accountable for implementation.

- Put together developmental programs for emerging leaders in the organisations to provide them with non -technical training, taking from an MBA to further develop their leadership capabilities.
- Have regular engagements with the workforce and encourage open and uncomfortable conversations to drive inclusivity in organisations.
- Curate diverse teams to drive better innovation.
- Implement recruitment, training and retention programs focused on female leadership advancement to encourage more females into leadership roles.
- Leaders should define what innovation means for South African organisations in order to start focusing on the relevant innovative solutions.
- Start creating spaces in organisations for creativity and learning where mistakes are celebrated instead of penalised in order to drive creativity.
- Take ownership of these issues and the mediating role of a leader.
- Start engaging other leaders in other industries and learn from them and create collaboration platforms.

10.9.3 Recommendations for the workforce

- Start the dialogue on these topics within teams.
- Promote and insist on collaboration with other project teams.
- Engage with the workforce in other industries and learn from them.
- Equip yourself with creative skills by taking lessons in other faculties such as the arts and humanities.
- Hold leadership accountable in their engagements with the workforce in the mediation process.

10.9.4 Recommendations to academic institutions

- Identify and develop curriculums that will assist the constructing industry graduates with cognitive thinking skills.
- Use the department and advisory boards to have regular engagements with industry around career development programs targeting the young professionals and females to ensure they are retained in the industry.

- Consider incorporating issues of diversity, inclusion and innovation more into the curriculum.

10.10 RESEARCH LIMITATIONS

Despite the relevant contributions made by this study, the following limitations existed:

- The literature reviewed for this study was limited in terms of literature specific to the industry and region of study as there was a limited number of studies on the topics conducted in Africa and South, thus there was a strong reliance on global literature, particularly in regions such as United States of America (USA), the United Kingdom (UK) and Asia.
- The collection of the quantitative data was a challenge due to Covid-19 and the inaccessibility of open construction sites hence the selection of non-probability sampling for this study. The survey monkey digital survey distribution platform was a viable option. However, it did add time and effort in distributing the questionnaire to a significant sample size.
- Covid-19 further prevented physical face to face interviews with the participants which would have been ideal for a complex study as this. The Microsoft Teams digital meetings platform was selected as the best option for the semi-structured interviews and the video functionality was used for these interviews, which assisted in improving the quality and overall experience of the interview.

10.11 FUTURE RESEARCH

Emanating from the research findings and conclusions the following areas for potential research are provided:

- Innovative solutions are intrinsic for future developments in organisations and should be investigated, therefore it is proposed that future research should be conducted specifically on innovative solutions in the construction industry.
- The impact of proper change management on transformational activities should be studied.
- The challenges that the workforce experience in problem-solving is a potential for future research.

- The framework to articulate the mediating influence of leadership could form the basis of future research on other aspects in the construction industry, such as the successful completion of construction innovative projects.
- Future research could evaluate the impact of transformation legislation on the sustainable implementation of change.
- The developed mediation framework could be used in future research as a source to evaluate the change management aspects required to successfully manage the relationship between diversity, leadership and innovation to advance organisational performance.

10.12 CLOSING REMARKS

This study evaluated the relationship between diversity, leadership and innovation in the South African construction industry. It provided answers to how leadership drives, influences and manages the relationship between diversity and innovation to advance organisational performance in the industry. This study further investigated the impact of this relationship on organisational performance, finding that if effectively managed by leaders, diversity can enhance an organisation's performance. This study contributed to the South African construction industry's practice by developing and producing a leadership mediation framework for effectively driving and managing the relationship between diversity, leadership and innovation to enhance organisation performance. The significance of this study is its contribution to the South African construction industry's theoretical and practical knowledge and to South Africa's transformation agenda.

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APPENDIX A: SEMI – STRUCTURED INTERVIEW CONSENT FORM

Kolosa Madikizela PhD Candidate University of Cape Town

Faculty of Engineering

Department of Construction Economics and Management

Semi - Structured Research Interview Informed Consent Form

"Interview Conducted in person or virtually via Microsoft Teams"

Background: This interview is part of the PhD research study titled "***An investigation into the relationship between Diversity, Leadership and Innovation in the Construction Industry"*** in fulfilment of the Degree of Doctor of Philosophy Construction Economics and Management. The interview should take 60-90 minutes to complete. Your participation in this research study is appreciated, thank you for your time.

Target Group: Individuals in Leadership roles within the South African Construction Industry Organisations, as selected from CIDB ranking.

Dear…….

I am conducting research on the relationship between Leadership, Diversity Factors and Innovation in the South African Construction Industry. To this end, I am requesting your participation in a one-on-one interview that will take place online via the Microsoft Teams application, at a pre-arranged time, confirmed with yourself. The interview will take no longer than 90 minutes of your time and will help me to gain a greater understanding about the

relationship between leadership, diversity factors and innovation in the South African construction industry.

Your participation in this process is voluntary and you may choose to withdraw at any time without penalty. In addition, the following terms and conditions are agreed to as they pertain to your participation in this research:

By affixing your signature hereto, you acknowledge that you have been informed of the collection, storage, analysis and reporting of data, defined as:

- Demographic data (specifically your age, gender and race).
- Tenure (specifically, how long you have been employed in the organisation).
- Your employment history.
- Your formal education and training journey to date; and
- New data that is provided during the course of the semi-structured interview.

You are also informed that your consent is subject to the following conditions:

- Each participating interviewee must complete and sign this "Informed Consent Form," prior to each interview and the duly completed forms will be stored in accordance with good document control practices.
- None of the participants included in the sample, represent or constitute a member of a 'vulnerable population' (defined as those members of the population who are particularly susceptible to coercion or undue influence, or who may have difficulty in giving free and informed consent to being the subject of research.)
- No incentive, in any way, shape or form, may be offered to respondents for their participation in the study.
- Participation in the research project is voluntary and participants can withdraw at any time without penalty.
- Data collected in support of this research project will be anonymised, stored and reported without identifiers, with the exception of the demographic information as it is pertinent to this research study, but no names will be revealed.
- Participants' identity will be anonymised at transcription phase and confidentiality is offered.
- Only aggregated information will be reported.
- Data will not be stored in public locations online. Microsoft Teams meeting recordings are automatically saved online within the confines and parameters of the company's user license and are subject to company data security protocols. These recordings will be manually removed and saved offline. Similarly, where online transcription software is used, recordings and transcripts will be manually removed, once transcription is completed, and saved offline.
- Data will be archived offline.
- Interviews will be conducted online via the Microsoft Teams application and such interviews will be recorded, in their entirety, via the Microsoft Teams application functionality in addition to one back-up voice recording device.
- The use and appointment of independent transcription services and / or editors (if required), will be subject to a signed non-disclosure and confidentiality agreement.

- All data associated with this research project will be safely and securely stored, using appropriate methods, in an accessible format, for a minimum period of ten years.
- It has been determined that the participants, included in the proposed sample, have the capacity to comprehend the content of the research, including the giving of consent.
- It is agreed that the research project will be executed in English, and it has been determined that all participants, included in the proposed sample, are conversant in English.
- It has been determined that none of the participants, included in the proposed sample, are at risk of possible harm or disadvantage, whether financial, legal, reputational and social or otherwise.
- It has been determined that there is no aspect of the proposed research of which the human subjects are not to be informed.

I confirm that I have read and understood this Memorandum of Agreement and agree to accept its content as indicated.

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Signature of Researcher:

Date:

Supervisor Name: Kathy Michell

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Kathy.michell@uct.ac.za

Tel: 021 650 3444

Signature of Supervisor:

Date:

Signature of **Research Participant**:

Date:

APPENDIX B QUANTITATIVE QUESTIONNAIRE

Kolosa Madikizela PhD Candidate University of Cape Town
Faculty of Engineering
Department of Construction Economics and Management

Research Questionnaire – "*Conducted via the Survey Monkey platform"*

Background:

This questionnaire is part of the PhD research study titled "***An investigation into the relationship between, Diversity, Leadership and Innovation in the South African Construction Industry"*** in fulfilment of the Degree of Doctor of Philosophy Construction Economics and Management. Your participation in this research study is appreciated. This questionnaire should take you 15 minutes to complete. This questionnaire is anonymous and only your general demographic information will be required.

Please kindly provide the following demographic information:

GENERAL DEMOGRAPHIC INFORMATION	
Age	
Gender	
City of residence	
Primary service of your organisation	
Job Title and Employment level in the organisation	
Number of years in the organisation	

Please Note: For the purposes of this study Leadership, Diversity and Innovation are defined as follows:

1. **Leadership**: A leader is one or more people who selects, equips, trains, and influences one or more follower who have diverse gifts, abilities, and skills and focuses the follower to the organisation's mission and objectives causing the follower to expend spiritual, emotional, and physical energy willingly and enthusiastically in a concerted coordinated effort to achieve the organisational mission and objectives. (Winston and Patterson, 2006)
2. **Diversity Factors**: The primary dimensions of diversity which are age, ethnicity and culture, gender, race, religion, sexual orientation and capabilities (Schäfer, 2005; Lančarič *et al*., 2015)
3. **Diversity Management**: Demographically diverse groups can outperform homogeneous groups on problem-solving and creativity tasks because diverse groups contain a greater variety of information, experience, perspectives, and cognitive styles. (Konrad, 2003)
4. **Innovation:** Is the implementation of ideas that have come together to create new solutions to problems or improvements to existing, systems, processes, products or attempted solutions (Mannucci & Perry-Smith, 2017; Taylor, 2017).

SECTION 1

Please indicate the extent to which you **strongly disagree or strongly agree** with the following statements on the relationship between leadership, diversity and innovation in the construction industry.

1.1 Leadership

#	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	This is an important topic and research study.					
2.	Diversity Management must be a leadership initiative, owned and driven by Senior Management namely the CEO and EXCO.					
3.	The role of Leadership in driving diversity in construction organisations is key to improving diversity in the industry as a whole.					

#	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4.	Leadership management and integration of diversity through workforce diversity management enhances innovation in construction organisations.					
5.	Leadership is the catalyst for driving innovation through effectively managing diversity in construction organisations.					
6.	In my organisation diversity management is a key leadership strategic agenda.					
7.	My organisation has innovation as a leadership strategic agenda.					
8.	The leadership within your organisation drives initiatives that foster diversity and innovation.					
9.	Leadership should drive the management of the relationship between diversity and innovation in the construction industry.					

1.2 Diversity

#	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	This is the first time I am participating in a research study where diversity in the construction industry is the topic.					
2.	Diversity such as age, ethnicity and culture, gender, race and capabilities are critical for the driving organisational success in the industry.					
3.	Diversity is important to improve organisational competitiveness and innovation capabilities.					
4.	My organisation has recruitment strategies and policies to drive, advance and address diversity factors.					
5.	The South African construction industry is not seen to be promoting diversity management as it continues to predominately attract, employ and promote males and in particular white males.					
6.	In the South African construction industry diversity and diversity management are not regarded as important issues that require focus.					
7.	Due to the lack of diversity previously disadvantaged groups and in particular black females are discouraged from considering careers in the construction industry.					

#	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
8.	Gender diversity is an important issue that needs focus in the construction industry to ensure that the industry has a diverse workforce to better address the challenges it faces.					
9.	A diverse construction organisation workforce brings new thinking approaches to the workplace.					
10.	Diversity increases and strengthens the interaction between different types of construction disciplines and levels of expertise.					
11.	Diversity workforce management should be a strategic drive for leadership in the construction industry.					
12.	Despite equal opportunity laws in South Africa women and other historically discriminated-against groups continue to remain disadvantaged and disempowered in the construction industry organisations relative to their white male counterparts.					
13.	The South African construction industry requires a more diverse workforce in order to address its economic growth and skills shortage challenges.					

#	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14.	The relationship between leadership, diversity and innovation and its impact on the South African construction industry's performance and success is an important topic that needs further research and analysis.					
15.	Diversity and inclusion are difficult and uncomfortable conversations to have.					
16.	The South African Construction industry is still a male dominated; particularly white male dominated industry.					
17.	My organisation has a diversity and inclusion policy.					
18.	Diversity and Inclusion should be a priority agenda in the South African construction industry.					

1.3 Innovation

#	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Construction industry organisations need to innovate in response to changing customer demands and lifestyles and to capitalise on opportunities offered by technology and changing marketplaces, structures and dynamics.					
2.	Innovation is an integral key element to the growth and evolution on the South African construction industry.					
3.	Workplace innovation can enhance the profitability of construction industry organisations in South Africa.					
4.	The construction industry in South Africa is shrinking and struggling to cope under tremendous economic pressure because of the lack of innovation in the industry.					
5.	The South African Construction Industry is not mature enough to embrace innovation because of the low levels of diversity and limited focus on diversity and innovation management initiatives.					

1.4 The relationship between leadership, diversity and innovation

#	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	This is the first time I am participating in a research study on the relationship between leadership, diversity and innovation in the construction industry.					
2.	There is a direct relationship between workforce diversity management and the ability of the workforce to be innovative.					
3.	There is a direct relationship between Leadership's focus on diversity management and the rate of innovation in organisations.					

SECTION 2

Please rate the following in terms of their level of importance within your own organisation (The Organisational Level) and in the South African Construction Industry (The Industry level) and from **not important to very important**

AT ORGANISATIONAL LEVEL						
#	Statement	Not Important	Somewhat Unimportant	Neutral	Somewhat Important	Very Important
1.	Diversity through Diversity (age, ethnicity and culture, gender, race and capabilities).					
2.	Effective Diversity Management.					
3.	Innovation					

#	Statement	Not Important	Somewhat Unimportant	Neutral	Somewhat Important	Very Important
4.	Innovation policies and solutions.					
5.	Increasing the interaction between different types of disciplines and experiences by advancing diversity factors.					
6.	Integrating diversity management into strategic leadership discussions and decision making.					
7.	Diversity and Inclusion as a driver of innovation.					
8.	Leadership effectively managing the relationship between diversity and innovation for the purposes of addressing the challenges facing the industry.					
9.	Implementing recruitment policies that advance diversity and inclusion.					
10.	Holding leadership accountable for advancing diversity and inclusion through KPI's.					

AT INDUSTRY LEVEL						
#	**Statement**	**Not Important**	**Somewhat Unimportant**	**Neutral**	**Somewhat Important**	**Very Important**
1.	Diversity through Diversity (age, ethnicity and culture, gender, race and capabilities).					
2.	Effective Diversity Management.					
3.	Innovation					
4.	Innovation policies and solutions.					
5.	Increasing the interaction between different types of disciplines and experiences by advancing diversity factors.					
6.	Integrating diversity management into strategic leadership discussions and decision making.					
7.	Diversity and Inclusion as a driver of innovation.					
8.	Leadership effectively managing the relationship between diversity and innovation for the purposes of addressing the challenges facing the industry.					
9.	Implementing recruitment policies that advance diversity and inclusion.					
10.	Holding leadership accountable for advancing diversity and inclusion through KPI's.					

Thank you for your time in completing this PhD study questionnaire

APPENDIX C: QUALITATIVE SEMI – STRUCTURED INTERVIEW GUIDE

Kolosa Madikizela PhD Candidate University of Cape Town

Faculty of Engineering

Department of Construction Economics and Management

Semi-Structured Research Interview Questions

"Conducted in person or virtually via Microsoft Teams"

Background: This interview is part of the PhD research study titled "***An investigation into the relationship between, Diversity, Leadership and Innovation in the South African Construction Industry***" in fulfilment of the Degree of Doctor of Philosophy Construction Economics and Management. This interview should take 60-90 minutes to complete. Thank you for your time, your participation in this research study is appreciated.

Target Group: Individuals in Executive Management Leadership roles within the South African Construction Industry Organisations (This includes global organisations that have operations in South Africa) as selected but not exclusively from the CIDB database. The target group also includes leaders in Academia.

Please kindly provide the following demographic information:

Age	
Gender	
City of residence	
Primary service of your organisation	
Job Title and Employment level in the organisation	

Question 1

On a scale from 1 – 10 where **1= 10% and 10 = 100%**, please rate your level of comfort in discussing leadership, diversity, inclusion and innovation?

#	Construct	Scale
1.	Leadership	
2	Diversity	
3	Inclusion	
4	Innovation	

Question 2

In your opinion, why is the relationship between leadership, diversity and innovation an important and relevant research topic for the advancement of the South African construction industry?

Question 3

As a leader in the construction industry, how important do you believe the proactive management of diversity is for the success of the South African construction industry?

Question 4

Why is proactive management important in the construction industry?

Question 5

In your experience how important is the relationship between workforce diversity management and workforce innovation?

Question 6

How can leadership play a pivotal role in influencing and driving this relationship to improve organisational performance and innovation?

Question 7

In your leadership role, how often have you pushed the agenda of diversity and inclusion within your organisation?

Question 8

Have you experienced resistance when pushing the agenda of diversity and inclusion within your organisation?

Question 9

What has been your experience when you have advocated for and pushed the agenda of diversity and inclusion within your organisation?

Question 10

What is your view about the responsiveness of the Construction Industry to economic market changes?

Question 11

What is your view about the construction industry's ability to innovate?

Question 12

What can the construction industry do to improve on diversity and inclusion?

Question 13

What can the construction industry do to drive more innovative solutions?

Question 14

What initiatives have you put in place in your organisation to advance diversity

Question 15

What initiatives has your organisation put in place to increase collaboration and innovation?

Question 16

How would you say the construction industry compares to other industries in terms of diversity, inclusion and innovation?

Question 17

Do you believe the Leadership in the South African construction industry needs to start focusing more on driving diversity and innovation at a strategic level in their organisations?

Question 18

What initiatives can the South African construction industry start putting in place to drive and improve the focus on diversity and innovation?

Question 19

What are some of the tangible benefits that exist for construction industry organisations when leadership drives the relationship between diversity and innovation?

Question 20

Please provide some recommendations on how organisational leaders within the South African construction industry could better manage the relationship between diversity and innovation.

Thank you for your participation in this semi-structured interview

APPENDIX D: SIGNED ETHIC CLEARANCE FORM

Application for Approval of Ethics in Research (EIR) Projects
Faculty of Engineering and the Built Environment, University of Cape Town

ETHICS APPLICATION FORM

Please Note:
Any person planning to undertake research in the Faculty of Engineering and the Built Environment (EBE) at the University of Cape Town is required to complete this form **before** collecting or analysing data. The objective of submitting this application prior to embarking on research is to ensure that the highest ethical standards in research, conducted under the auspices of the EBE Faculty, are met. Please ensure that you have read, and understood the **EBE Ethics in Research Handbook** (available from the UCT EBE, Research Ethics website) prior to completing this application form: http://www.ebe.uct.ac.za/ebe/research/ethics1

APPLICANT'S DETAILS		
Name of principal researcher, student or external applicant		Kolosa Madikizela
Department		Construction Economics and Management
Preferred email address of applicant:		kolosa.madikizela@gmail.com
If Student	Your Degree: e.g., MSc, PhD, etc.	PhD Construction Economics and Management
	Credit Value of Research: e.g., 60/120/180/360 etc.	360
	Name of Supervisor (if supervised):	Kathy Michell
If this is a researchcontract, indicate the source of funding/sponsorship		N/A
Project Title		An investigation into the relationship between leadership, diversity factors and innovation in the construction industry

I hereby undertake to carry out my research in such a way that:

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and
- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

APPLICATION BY	Full name	Signature	Date
Principal Researcher/ Student/External applicant	Kolosa Madikizela		22 January 2021
SUPPORTED BY	Full name	Signature	Date
Supervisor (where applicable)	Kathy Michell		4 Feb 2021

APPROVED BY	Full name	Signature	Date
HOD (or delegated nominee) Final authority for all applicants who have answered NO to all questions in Section 1; and for all Undergraduate research (including Honours).			
Chair: Faculty EIR Committee For applicants other than undergraduate students who have answered YES to any of the questions in Section 1.	Hans Beushausen		26/02/21

Page 1 of 1

APPENDIX E: NVIVO 12 EMERGENT THEMES

Emergent Themes		Number of coding references	Aggregate number of coding references	Number of items coded	Aggregate number of items coded
Emergent Theme One - 8.3.1					
The characteristics of the South African construction industry		229	883	23	24
Sub Theme 8.3.1.1	The construction industry is sustainable	52	52	21	21
Sub Theme 8.3.1.2	The South African Construction Industry is not diverse and its untransformed	307	307	24	24
Sub Theme 8.3.1.3	Ability and potential to innovate exits in the Construction Industry, though there is no willingness	174	174	24	24
Sub Theme 8.3.1.4	The Construction Industry is rigid and resistant to change	121	121	24	24
Emergent Theme Two – 8.3.2					
Integration and management of diverse teams to drive better innovation		185	304	24	24
Sub Theme 8.3.2.1	Collaboration	50	102	18	23
Sub Theme 8.3.2.2	Communication	26	52	11	18
Sub Theme 8.3.2.3	The importance of Inclusion	26	26	12	12
Emergent Theme Three – 8.3.3					
Leadership capabilities, qualities and development\Ability to drive diversity, inclusion and innovation		112	423	24	24
Sub Theme 8.3.3.1	Leadership Ability to drive diversity, inclusion and innovation	21	21	10	10
Sub Theme 8.3.3.2	Leadership is a position of influence	53	53	20	20
Sub Theme 8.3.3.3	Leadership Development	245	311	24	24
Sub Theme 8.3.3.4	Transformational Leadership	66	66	16	16

Emergent Themes		Number of coding references	Aggregate number of coding references	Number of items coded	Aggregate number of items coded
Emergent Theme Four – 8.3.4					
Recruitment, training and retention		53	102	18	23
Sub Theme 8.3.4.1	Recruitment and training of females in the industry	23	23	11	11
Sub Theme 8.3.4.2	Training and Skills transfer	26	49	12	17
Emergent Theme Five – 8.3.5					
Successful organisations and Industry Impact		193	309	24	24
Sub Theme 8.3.5.1	Successful organisations	146	146	24	24
Sub Theme 8.3.5.2	Improved design and problem-solving	60	60	19	19
Sub Theme 8.3.5.3	Contribution to the economy and positive impact on society	56	56	17	17