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Exploring managers' experiences in complying with the infrastructure grant conditions at selected Gauteng TVET colleges

Wits School of Governance

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A thesis submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfillment of the requirements for the Degree of Master of Management in the Field of Monitoring and Evaluation

Supervisor
Prof. Pundy Pillay

February 2023

Declaration

I **Ngidi Sindisiwe Thabile Saviour Ngidi** declare that the research report *Exploring managers' experiences in complying with the infrastructure grant conditions at selected Gauteng TVET colleges* is my unaided work. It has been submitted in partial fulfilment of the requirement for the degree of Master of Management in the field of Monitoring and Evaluation at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other university.

Sindisiwe Thabile Ngidi

February 2023

DEDICATION

I dedicate this research report to the memory of my late husband Khulekani Desmond Ngidi and my parents who were not educated but taught me that knowledge is power. Also, it is dedicated to my siblings for sacrificing time to allow me to pursue my studies.

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It would not be fair if I leave out the principals of Tshwane North and Sedibeng TVET colleges for granting me permission to conduct the study in their respective colleges. Also, I am grateful for the participants at the two TVET colleges who gave their valuable time and shared insightful experiences with me.

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ABSTRACT

This study explores the experiences of the management in Technical and Vocational Education and Training (TVET) colleges in compliance with conditions attached to infrastructure grants allocated by the Department of Higher Education and Training (DHET). The study discusses the participant's experiences and explores suggestions on what the Department should do to enhance compliance with the grant conditions in TVET colleges. The literature review acknowledges that quality education in TVET colleges is hampered by dilapidated and inadequate infrastructure resulting from inadequate funding. Additionally, the causes of non-compliance and strategies for mitigation are discussed in the literature review. The study considers the importance of infrastructure in education in international, continental, and national contexts to understand how other countries worldwide regard the importance of infrastructure and how it is funded.

The study used semi-structured interviews and questionnaires as instruments for data generation. The main instrument of data collection was semi-structured interviews. The case study approach was applied in the study to further examine the extent to which the infrastructure grant conditions impact the implementation of infrastructure projects at TVET colleges. It was found that the complexity of infrastructure grant conditions delays project implementation, which further interrupts teaching and learning. The study concludes by highlighting the strategies that DHET should implement to enhance compliance by TVET colleges with grant conditions. Such strategies include improving project approval turnaround time; continuous monitoring by DHET; adequate and continuous training of infrastructure grant personnel; establishing a stakeholder relations office; appointment of infrastructure personnel; and developing an infrastructure funding policy. Study participants believe that implementation of the highlighted strategies will improve compliance in TVET colleges.

Keywords: earmarked funding, compliance, infrastructure grant, inadequate funding.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION **1**
1.1 Introduction and Background 1
1.2 Background 3
1.3 Problem Statement 6
1.4 Research Purpose 7
1.5 Research Questions 7
1.6 Structure of the Report 8
CHAPTER 2: LITERATURE REVIEW **9**
2.1 Introduction 9
2.2 What is Infrastructure? 9
2.3 Importance of Infrastructure for Education and Development 9
2.4 Importance and Funding of Infrastructure in Higher Education Institutions 11
2.4.1 Review of international literature 11
2.4.2 African countries 14
2.4.3 South Africa 17
2.5 Factors that Contribute to Non-compliance with Infrastructure Grant Requirements 20
2.5.1 Unrealistic, complex, and impracticable funding conditions 20
2.5.2 Poor governance and lack of consequence management 20
2.5.3 Lack of proper and continuous monitoring 21
2.5.4 Long procurement processes and planning 21
2.5.5 Failure to follow the institution's recruitment processes 21
2.5.6 High turnover rates and lack of capacity 21
2.5.7 Deficiencies in financial control 22
2.5.8 Other factors 22
2.6 Impact of Grant Conditions on Project Implementation 22
2.7 Strategies to Improve Compliance with Infrastructure Funding Requirements in TVET Colleges 23
2.8 Theoretical Framework 25
CHAPTER 3: RESEARCH METHODOLOGY **28**
3.1 Introduction 28
3.2 Research Approach 28
3.3 Research Design 29
3.4 Research Tools and Application 30
3.4.1 Document analysis 31

3.4.2 The interview processes 31
3.5 Sampling 32
3.6 Data Analysis 34
3.7 Reliability and Validity 35
3.8 Ethical Considerations 36
3.9 Limitations 37
3.10 Conclusion 38
CHAPTER 4: DATA PRESENTATION AND DISCUSSION 39
4.1 Introduction 39
4.2 Biographical Information 39
4.3 Data Presentation and Discussion 41
4.3.1 Challenges brought by infrastructure conditions that may lead to non-compliance 41
4.3.2 The extent to which the challenges affect the implementation of infrastructure projects undertaken by Gauteng TVET colleges 48
4.3.3 Strategies to improve compliance with infrastructure funding requirements in TVET colleges 52
4.4 Conclusion 61
CHAPTER 5: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS 62
5.1 Introduction 62
5.2 Study Summary 62
5.3 Conclusion 63
5.3.1 Challenges experienced by TVET colleges when complying with infrastructure grant conditions 63
5.3.2 The extent to which the conditions affect infrastructure project implementation 64
5.3.3 Strategies to improve compliance with infrastructure funding requirements in TVET colleges 64
5.4 Recommendations 65
5.4.1 Involvement of the TVET colleges in setting the infrastructure grant conditions 65
5.4.2 Continuous monitoring 65
5.4.3 Provision of training 66
5.4.4 Establishment of stakeholder office and management teams 66
5.4.5 Provision of adequate and skilled personnel 66
5.4.6 Developing the infrastructure funding policy 66
5.5 Chapter Summary 67
REFERENCES 68

CHAPTER 1: INTRODUCTION

1.1 Introduction and Background

South Africa's triple challenges of unemployment, poverty, and inequality are mainly addressed by the country's long-term development plans for education, training, and innovation (Killian, 2017). In transforming and equipping individuals, communities and societies consider education an essential development tool. This is supported by the Constitution of the Republic of South Africa (RSA, 1996), which emphasises that education, including further education, is an individual right that the government must ensure is not infringed. Scholars such as Teixeira, Amoroso and Gresham (2017) and Khakhau (2019) suggest that quality education, better outcomes and reduced student attrition can be achieved through quality infrastructure. Consequently, every country, including South Africa, should strive to improve infrastructure in higher education to achieve improved education outcomes. Despite policymakers focusing more on the school learning environment, developing countries also need to consider greater investment in education to make it more accessible.

The 1997 Education White Paper 3 identified the main aim of the Ministry of Education "to promote equity; access and fair chances of success to all who are seeking to realise their potential through higher education while eradicating all forms of unfair discrimination and advancing redress of past inequalities" (Mathekga, 2012, p. 49, cited in Mzangwa, 2018, p. 7). The three National Development Plan (NDP) objectives – to reduce unemployment and eliminate poverty and inequality – can be accelerated and achieved through efficient and effective infrastructure planning (Seepe, 2007; Killian 2017; Amadi & Ohaka, 2018). It is evident that failure to have a proper plan for developing infrastructure is retarding the primary objectives of the NDP. Technical Vocational Education and Training (TVET) colleges are institutions of higher learning and essential for development. Their infrastructure should be refurbished and expanded to enhance quality education (DHET, 2019). Despite having TVET colleges as crucial for development and poverty alleviation, most developing countries still regard them as dumping sites for poor performers or underachievers, as a result of focusing more on universities (DHET, 2019).

The current Minister of Higher Education, Science, and Technology, Dr Blade Nzimande, acknowledges that inadequate infrastructure funding in the TVET sector is the main challenge hindering progress in the economic transformation South Africa is striving to achieve (DHET, 2019). The 2017 pronouncement of free higher education worsened the situation as the demand for higher education increased, while infrastructure investment to accommodate growth in student numbers was static. Additionally, the Covid-19 pandemic, which South Africa experienced from 2020 – 2022, exacerbated the situation in TVET colleges since budget cuts in infrastructure funds were reprioritised to pandemic-related activities (Mafolo, 2020). Such reprioritisation of the funds delayed infrastructure project implementation, ultimately impacting teaching and learning in higher education institutions (HEIs).

In 2016, South Africa was overwhelmed by the extensive student protests supporting *free higher education* announced by the then South African President, Mr. JG Zuma (Mlambo, Hlongwa, and Mubecua, 2017). Free higher education is good and important for a country that is in developing since it enables equal access to education; however, it needs proper and strategic planning accompanied by a sound funding model. Badenhost (2019) argued that the pronouncement of the free-fee higher education was premature, especially as it was made despite the recommendation of the Heher Commission to reject free-fee higher education due to factors such as inadequate infrastructure in the sector. The announcement has impacted the higher education sector since the country witnessed growing demand with limited space to accommodate the number of students enrolling.

Besides having the inadequate infrastructure in TVET colleges, the administration of infrastructure funds was not satisfactory in most higher learning institutions in South Africa (Moyo & Mackenna, 2021). In 2007, the DHET disbursed funds for a similar purpose to colleges in the form of a recapitalisation programme; however, TVET colleges abused the funds, resulting in their goal not being achieved. To ensure that earmarked funds achieve what they are meant to, funders should develop spending requirements and monitor compliance timeously. Some causes of non-compliance

include capacity constraints and a lack of qualified and experienced infrastructure personnel among others (PMG, 2020). Additionally, the inability of some HEIs to comply with funding requirements is due to a lack of alignment between the academic year and the DHET financial year (Moyo, 2018).

This study responds to the research objective of exploring managers' experiences in complying with the infrastructure grant conditions at Gauteng TVET colleges.

1.2 Background

The proclamation of Section 97 of the Constitution of the Republic of South Africa by the country's former president resulted in splitting the education sector into the Department of Higher Education and Training (DHET) and the Department of Basic Education (DBE) (Mokoena, 2020). TVET colleges were established due to merging of Further Education Training (FET) colleges and were designed to bring about and ensure racial equity in the sector. They were transferred to DHET accompanied by changes in governance and administration. TVET colleges are regulated by the Continuing Education and Training (CET) Act 16 of 2006 (RSA, 2006). South Africa has 50 public TVET colleges on 264 campuses. They offer National Certificate Vocational (NCV) programmes, National Accredited Technical Diplomas (NATED), and occupational qualifications (DHET, 2021). TVET colleges are mandated to achieve the NDP target of increasing student enrolment from 700 000 in 2014 to 1.2 million by 2030 in order to reduce the shortage of skills in the country, requiring more investment in infrastructure to align with the upcoming year's intake (Mlambo et al., 2017).

Given the TVET colleges' severe infrastructure development backlog, the South African Cabinet approved establishing the *infrastructure grant*, resulting in the National Treasury allocating such funds in 2018 (DHET, 2019). In 2021, DHET published the National Norms and Standards for Funding TVET colleges (NNSF-TVET colleges), which were implemented on 1 April 2021. Section 62 of the NNSF-TVET colleges states that "the Capital Infrastructure and Efficiency Grant (CIEG) was

introduced by National Treasury as the grant earmarked for college new buildings and refurbishment as student numbers rise, as well as the increased maintenance costs consequent on growing numbers given the expansion in the college system" (DHET, 2021). The NNSF-TVET colleges emanate from Section 23 of the CET Act (RSA, 2006), which requires the Minister to determine the criteria in the form of norms and standards for funding TVET colleges.

In June 2018, DHET issued a circular informing TVET colleges of the earmarked infrastructure grant and conducted training for college management emphasizing the spending conditions (DHET, 2019). Nzama (2019) argues that the infrastructure grant allocation attracts different views since some institutions consider it inadequate to meet the mandated objective, while the main concern for others is the poor financial management in public institutions. The grant conditions require TVET college managements to: deposit the funds in a dedicated infrastructure grant bank account; apply to utilise the funds through maintenance plans approved by the DHET; spend the funds according to approved maintenance plans and on infrastructure repairs and maintenance only; report quarterly to DHET on the expenditure of the funds by the 15th of the month, following the quarter under review, using the prescribed reporting template ; and appoint an Assistant Director on a three-month contract at salary level 9 with a qualification in Construction Management (DHET, 2018). The DHET expects all TVET colleges to comply with infrastructure grant conditions and to institute consequence management against non-compliant college Accounting Officers as cited in CET Act 16 of 1996 (RSA, 2006).

Despite all this, non-spending of the funds by TVET colleges is a significant concern as it results in the National Treasury cutting the infrastructure budget and some colleges spending the funds without complying with the conditions laid down by DHET (National Treasury, 2020). The table below indicates the underspending of funds by TVET colleges, which negatively impacts project implementation.

Table 1: TVET Colleges' Infrastructure grant allocations as against the expenditure

Allocation financial year	**2018/19**	**2019/20**	**2020/2021**
Initial Allocation (Millions)	**R1.3 billion**	**R1.484 billion**	**R959.218 million**
Budget cut during the year	0	R400 million	R566.406 million
Amount after the budget cut	**R1.3 billion**	**R1.084 billion**	**R392.812 million**
Grant as a percentage of Expenditure	12%	13.4%	24%

Source: PMG (2021)

TVET colleges struggle to spend the infrastructure grant amidst a vast backlog in maintenance. At the end of the 2018/19 financial year, TVET colleges reported spending of 12% against total allocation, which attests that institutions find it difficult to spend the funds amid infrastructure backlogs, which should be given more attention (Moyo & Mckenna, 2021). Slow spending of infrastructure funds by TVET colleges resulted in an infrastructure budget cut in the following financial years, with a reduction in the allocation for 2019/20 and 2020/21 by R400 million and R566.406 million respectively. The DHET Deputy Director-General (DDG) for TVET colleges, Sam Zungu, argued that the impact of budget cuts in the MTEF period resulted in insufficient maintenance funds for TVET colleges (PMG, 2021).

Against this background, this study explores managers' experiences in complying with the infrastructure grant conditions at selected Gauteng TVET colleges.

1.3 Problem Statement

In 2018, the National Treasury allocated funds to the DHET earmarked for infrastructure repairs and maintenance of TVET colleges to improve teaching and learning (National Treasury, 2020, cited in Mokoena, 2020). The infrastructure grant is conditional, and all TVET colleges are expected to conform to the conditions laid down by the DHET. Among the conditions set, TVET colleges must quarterly submit expenditure reports to the DHET to monitor compliance with the spending of funds. The submitted quarterly expenditure reports indicate that most TVET colleges incurred deficient spending of the funds and other non-compliance issues, such as late reporting and spending without DHET approval (PMG, 2020).

The study is based on TVET colleges that incur low spending and experience low spending, late reporting, and spending without DHET approval as non-compliance issues. Low spending on infrastructure grants is a significant concern in the sector since it attracts budget cuts of infrastructure funds from the National Treasury, exacerbating inadequate funds, and negatively impacting teaching and learning in TVET colleges (DHET, 2019). A meeting between DHET and TVET colleges managements, which the researcher attended, triggered the researcher to conduct this study. TVET colleges management defiantly clarified to DHET that the conditions set for infrastructure grants contributed to the state of non-compliance colleges find themselves in. Reinsberg, Stubbs, and Kentikelenis (2021) support this by arguing that some spending requirements that the donor institutions set contribute largely to compliance failures.

Similar to other public institutions, management in the TVET colleges fails to demonstrate the necessary governance skills to administer and manage state funds. Various studies have explored the importance of infrastructure in education, but more focus is needed on how it is funded and the degree of compliance with the spending requirements. This study tries to bridge the knowledge gap by providing more literature on the importance of infrastructure in education and development and how infrastructure in the higher education sector is funded. The study will also focus on the challenges caused by conditions attached to infrastructure grants, mitigation strategies,

the effect on project implementation, recommendations for compliance with infrastructure grants, and future studies.

This study will contribute to what can enhance accountability in terms of compliance with the conditional infrastructure and other grants the government allocates to TVET colleges, and a need to review spending conditions. Furthermore, participants' views will hopefully contribute to developing the infrastructure funding policy currently non-existent at the DHET. This study will apply a phenomenological approach, with the researcher focusing on conceptualising observed phenomena while acquiring knowledge about the importance of infrastructure in education and the compliance of TVET college management.

1.4 Research Purpose

This study explores managers' experiences in complying with the infrastructure grant conditions at selected Gauteng TVET colleges.

1.5 Research Questions

The main research question is the following:

- What are the management experiences of Gauteng TVET colleges regarding compliance with the DHET infrastructure grant conditions?

The research sub-questions are:

- What challenges are brought by infrastructure grant conditions that may lead to non-compliance by Gauteng TVET colleges?
- To what extent do the challenges affect the implementation of infrastructure projects undertaken by Gauteng TVET colleges?
- Are there strategies that Gauteng TVET colleges recommend in dealing with such challenges to ensure compliance with the infrastructure grant conditions?

1.6 Structure of the Report

The structure of the report is as follows:

Chapter Two focuses on the review of the literature focusing on the importance of infrastructure in the higher education sector nationally, continentally, and internationally. The chapter examines the importance of infrastructure in education and development and how it is funded in the higher education sector. The challenges brought about by infrastructure conditions, how they affect project implementation and what strategies the Department should implement to deal with the difficulties in ensuring compliance are discussed. Additionally, the chapter discusses the theoretical framework of the study.

Chapter Three outlines the research approach, design, methods, and techniques the researcher used to collect data. The chapter further discusses how the researcher collected and analysed data. Furthermore, ethical considerations applicable to the study and the limitations experienced by the researcher are discussed.

Chapter Four analyses the study findings in answering the research questions outlined in Chapter Two through the data collected by employing the various methods established in the previous chapter. The chapter explores the experiences of the management in TVET colleges with the infrastructure grant conditions and their impact on infrastructure projects. The chapter further identifies and analyses the challenges managers face in spending on the infrastructure grant and implementing the projects in TVET colleges.

Chapter Five outlines the strategies and recommendations as supported by the literature and the conclusion of the research report. This final chapter outlines recommendations and strategies to rectify the shortcomings and suggests areas of action that provide recommendations for further research in the field of study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Chapter One provided an introduction to and background of the study. The chapter discusses the study motivation, the problem statement, the study purpose and rationale, the research questions, and the significance of the study. Chapter Two critically presents a literature review of studies previously conducted by other scholars on the importance of infrastructure in education and development nationally, continentally, and internationally. The literature review provides some theoretical background and understanding of this study and partially answers the research questions. The chapter further includes theoretical and conceptual frameworks underpinning the study as well.

2.2 What is Infrastructure?

Infrastructure, when defined by Chow & Croxton (2017) and Shoukat & Ahmad (2017) refers to all the organisational structures and physical equipments, such as roads, buildings, power, and supplies essential for proper functioning of an enterprise and society. Additionally, it is regarded as a prerequisite for economic development. Masunungure (2021) when defining organisational infrastructure in HEIs, refers to facilities and services used to facilitate and support the execution of activities that are important in achieving the goals and objectives of the organisation, such as teaching and learning.

2.3 Importance of Infrastructure for Education and Development

Various scholars from different countries have debated the role of infrastructure in education in developing countries. Studies conducted by Arima (2017), Arima (2018) and Manggat, Zain, and Jamaluddin (2018) conclude that development in any country requires infrastructure expansion and human capital investment. The growth and prosperity of every country and city depend on how adequately infrastructure is

provided, refurbished or upgraded, and maintained, which is essential for economic growth and reducing poverty in developing communities (Arima, 2017; Manggat et al., 2018). Fongwa and Mohamed (2022) argue that community engagement requires that policy directives for HEIs should respond to a country's socio-economic challenges and the needs of the local communities.

Although infrastructure is vital for development, Manggat et al. (2018) posit that most African countries experience under-investment in education characterised by deficient infrastructure characterised by backlogs. Masunungure (2021) support this in maintaining that the sluggish economic growth and global economic crisis have created a hazardous situation in the education sector due to reduced funding for new infrastructure and refurbishing and maintaining the existing infrastructure, thereby hampering development. However, in African countries where an imbalance is observed between the infrastructure requirements in fast-growing cities and the authorities' ability to provide adequate financial resources, continuous cuts in infrastructure budgets have aggravated the challenges, leaving HEIs in a dilapidated state (Manggat et al., 2018). During economic downturns or emergencies, governments redirect infrastructure project funding to address other urgent needs that negatively impact development. This cycle can be terminated by establishing innovative financing instruments to diversify capital resources and ensure that they accelerate the country's development (Manggat et al., 2018; Tian et al., 2019).

Challenges related to the funding of HEIs differ among states and include inadequate funds for infrastructure development, inadequate income by the institutions, and inefficiencies in the system (Masunungure, 2021). If a country neglects education, it neglects its growth and development because higher education contributes mainly to the nation's growth. To support development, HEIs must ensure proper accountability and effective utilisation of the funds, while failure may affect future funding and result in withdrawal by funders (Moyo, 2018; Mokoena, 2020; Vento, 2021).

2.4 Importance and Funding of Infrastructure in Higher Education Institutions

The study reviews the relevant literature in Africa, Europe, South Asia, East Asia, and the Americas.

2.4.1 Review of international literature

(i) India

Economic growth and development in every country depend on its infrastructure, particularly physical and human capital, which are essential for the pursuit of development goals (Jana & Karmakar, 2017). The Indian government realised the importance of infrastructure and acknowledged that if not developed, it would become a barrier in economic growth and development. The government encouraged foreign direct investments (FDIs) and strengthened infrastructure development policies implemented overtime (Sharma & Sharma, 2017; Mabugu, 2017). As a result, India has shown very good progress in infrastructure investments because the country has an advantage if both labour and capital resources, resulting in steady industrial growth with good investment returns contributing to the country's economic growth and development, including human development (Kaur & Kaur, 2018). Therefore, infrastructure development drives the Indian economy.

In the overview by Borah (2020), the Department of Higher Education in India states that the overall development of the infrastructure of HEIs is the responsibility of the Ministry of Education (MoE) in terms of both policy and planning. Department planning and development ensures access to higher education through the expansion of institutions such as universities and colleges, including technical, professional, and vocational education and other institutions (Borah, 2020). As a result, transformation in HEIs means government should plan for the development of new campuses and maintenance of existing structures to improve teaching and learning for individual development and the country's economic growth.

The higher education system in India is the world's third largest with 51 649 institutions, and it is very complex (Jana & Karmakar, 2017; Ravi et al., 2019; Borah, 2020). Until 1990, the government in India was the primary provider of higher education, including infrastructure provision because the country considered higher education a public good. As a from 2008 to 2009, the country experienced an increase in higher education demand which led to a rise in government expenditure, including infrastructure expansion (Jana & Karmakar, 2017; Ravi et al., 2019). HEI funding in the country, including infrastructure, is provided by government and local bodies, grants-in-aid, endowments and land grants, and donations from the private sector. Despite such enormous funding, inadequate educational infrastructure and facilities caused by increased demand for higher education are a greatly significant challenge. This resulted in the Indian government launching the National Education Mission in 2013, which addresses issues such as expansion, as well as excellence in the higher education sector (Ravi et al., 2019; Borah, 2020).

(ii) China

Although education is prioritised for boosting economic development, , the public budget for sustaining the sector's expansion is limited worldwide, and China is no exception (Mabugu, 2017). China is among the countries that provide aid to Africa, and it has shown a substantial increase in its development interventions to boost economic, political, and social expansion, which resulted in establishing the China International Development Cooperation Agency (CIDCA) in 2018. The CIDCA provides grant aid related to education and health, with the main emphasis on the education and training of individuals for development (Grant, 2017).

Education, as noted by Abiad and Teipelke (2017), is regarded as crucial and the government of China has injected massive funding to improve and expand infrastructure in the education sector. Infrastructure provision in China involves both foreign and private actors in the sector, with an average of about $7 billion a year over the past two decades, which is a drop in the bucket if compared to overall infrastructure investments in the country. The country has experimented with different forms of

private participation in infrastructure funding, such as inviting foreign investors into power generation involvement around the 1990s. However, Owens (2017) argues that none of the experiments have been fully implemented, and the country resorted to state-owned enterprises for bulk infrastructure investment.

Lavakare (2018) observes that China has a more extensive higher education infrastructure than other countries and has undertaken reforms that have resulted in attracting international students, and ensuring that a significant number of the local population receives education. Government funding in the country guarantees comprehensive access to higher education, which is well-coordinated for sustainable development. It plays a massive role in achieving the United Nations Sustainable Development Goal 4, which outlines the importance of expansion, refurbishing, and maintaining infrastructure in the education sector (Owens, 2017). In support of SDG4, the government of China has signed a contract with the Organisation of Petroleum Exporting Countries (OPEC), which funds projects that meet people's basic needs, including education. In 2019, OPEC funded Chinese projects to the extent of US$50 million, with 90% of the funds dedicated to education and health sectors specific to tertiary-level infrastructure. The Chinese government pursued this based on the understanding that tertiary education enables socio-economic growth, and since the country began shifting toward producing capital-intensive goods, the demand for highly skilled workers is increasing.

Furthermore, the Chinese government introduced and implemented a policy of popularising higher education, which resulted in a significant change in spatial structures as the government increased infrastructure funding (Fu & Henyeko, 2022). Despite increased funding, the sector needs to catch up with the demand pace, creating an impetus for the state to meet the growing demand by developing effective strategies.

(iii) The experience of other industrialised and developing countries

Studies in Germany, Australia, the United Kingdom (UK), and Vietnam indicate that the countries participated in an *international strategy for higher education* and fully

acknowledged infrastructure as essential for education and as the primary driver of development. However, a lack of infrastructure funding harms the strategy's chances of success (Illeava & Peak, 2016; Australian Government, 2013, cited in Matabane, 2017). In 2013, like South Africa, the Australian government introduced an infrastructure grant meant to refurbish and upgrade identified infrastructure projects to support and promote quality education. The 1963 Robins Report on Higher Education in the UK recommended upgrading former technical and other educational and vocational institutions into HEIs (Ntim, Soobaroyen, and Broad, 2017). This called for an increase in infrastructure funding which stretched government budgets, including for infrastructure, even during the period when economic activities are in contraction phase.

2.4.2 African countries

(i) Nigeria

Sub-Saharan African countries face the challenges of rapid population growth, low human capital, and a high rate of sickness, therefore, education should be prioritised to bring people out of poverty, as stated in SDG 4 in education (Kazeem, 2017).

Investigating the impact of infrastructure investment on Nigeria's economy has caught a few researchers' attention. One study by Ogun (2010, cited by Fagbemi, 2022) conducted in Nigeria points out a relationship between infrastructure investment, education, and poverty reduction. Infrastructural development is essential to human capital and economic growth, resulting in a country's development. However, due to a lack of infrastructure in the education sector or high unemployment rates and poverty, the country's economic growth does not translate to economic development. Inadequate infrastructure funding, poor leadership, poor maintenance, and corruption affect Nigeria's development. Lack of good governance and sound principles such as transparency and accountability has contributed to project failure in Nigeria (Ateloye, Bowles, and Oyegoke, 2016; Subair, Okotoni, and Adebakeen, 2017). Infrastructure funds are diverted to building homes for private individuals, which results in dilapidated infrastructure and project failure, which in turn hampers development. Good

governance can be the solution as it bridges the wide between infrastructure and education and ensures economic stability.

Oyegoke (2016) maintains that qualitative and quantitative growth in the HEIs is impacted by poor quality and non-expansion of infrastructure in terms of buildings and machinery, maintenance, and usage. Most HEIs in Nigeria lack infrastructure, which hampers teaching and learning, economic development, and growth in the region. Enefola (2016) and Olufemi (2020) argue that inadequate infrastructure in Nigerian HEIs results from poor funding. Odigwe and Owan (2019) argue that The United Nations Educational, Scientific and Cultural Organization (UNESCO) has benchmarked education allocation for developing countries at between 20% and 25% of a country's total budget, with 26% being the international standard. Between 1999 and 2014, HEI infrastructure budget allocations were far below the benchmark of 26% recommended by UNESCO. During 2019 and 2021, HEI allocations were at 7.05% and 5.06% respectively. HEIs had to look at other ways to generate income to fund infrastructure expansion, for example by means of public-private partnerships or any other commercial activities. To generate income, the Nigerian government has implemented some reforms, such as investing in private sector participation. The reforms include Public Private Partnership Initiatives (PPPI), Higher Education Collaboration (HEC), and Private Development Initiatives (PDI), among others. However, such reforms did not significantly impact the sector and a legal framework called the Concession Commission Act (ICRC Act, 2005) was introduced guiding private participation in the public sector (Enefole, 2016; Thomas, 2013, cited in Ateloye et al., 2016).

(ii) Malawi

When Malawi obtained independence in 1964, the Malawi government with the help of the World Bank, executed development policies up to the 1990s to improve the socio-economic landscape (IMF, 2017). To improve the people's standard of living, the country developed poverty alleviation programmes such as skilling youth, the Malawi Growth and Development Strategy (MGDS) from 2006 to 2011, MGDS II, and Vision

2020. MGD II was specific to improving people's lives through infrastructure development and sustainable growth. The strategy was informed by the view that if the citizens of Malawi were to benefit from the country's economic growth equitably, the promotion of human and social development must be complemented by structural transformation and infrastructure improvement (Mambo, Meky, Tanaka, and Salmi, 2016).

The Malawian government acknowledges that education improves the quality of life for the citizens, leading to greater economic stability (Kayange, 2021). A World Bank study (2016) indicates that enrolment in Malawi higher education is the lowest in the entire Eastern and Southern African region, affecting the country's economic development. The challenges affecting student enrolment include inadequate government funding to public universities and TVET colleges (Ndovi & Miao, 2019; Kayange, 2021). Despite acknowledging that infrastructure in HEIs is one of the primary determinants of quality education, and further enhances equitable access to education, the sector is challenged by a lack of infrastructure.

In embracing the importance of infrastructure in HEIs, Ndovi and Miao (2019) posit that the government of Malawi made an effort to increase funding for higher education infrastructure by partnering with donors; however, corruption hindered success. Until 2013, 60% of the country's total infrastructure budget was funded by the government, with 40% received from donors. However, after 2013 the donors started reducing investment funding, and in 2019, the country witnessed a reduction in government funding to 18%. Such withdrawal of and reduction in funding due to corruption and mismanagement impacted the country's quality of education which should a priority (Ndovi & Miao, 2019). Government-supported policy development guides investment in education to meet the sectoral infrastructure objectives (Ndovi & Miao, 2019). Kayange (2021) also argued that poor education policies and strategies contribute to poor quality education in Malawi.

(iii) Kenya

A deliberate move by the Kenyan government to recognize the role the sector plays in the country laying the vocational skills foundation needed for socio-economic and technological development led to a drastic increase of HEIs in the country with a rise in TVET Colleges from 874 to 2191between 2015 and 2019 (Mukhwana, Too, Kande and Nandokha, 2020). Over the same period, the number of universities increased from 66 to 74. Despite rapid expansion, the sector is affected by challenges such as a decline in public funding and inadequate and aging infrastructure. To acknowledge the role of infrastructure in development and education, in January 2014, the President of Kenya announced that the country's policies would involve large spending on infrastructure, with a large percentage to be spent on education infrastructure (Wanjala, Chepkoech, and Khatete, 2020).

The Government of Kenya over the years has been striving to prioritise spending on HEI capitalisation, but funding has been inadequate to ensure the right infrastructure in institutions of higher learning (German Development Cooperation in Kenya, 2017 cited in Mukhwana et al). The country recorded a rapid increase in Government spending on HEIs, with TVET Colleges rising by 310% and universities by 87% within 5 years. However, the funds were not adequate to ensure access to higher education as a result, the country sourced funding through Higher Education Loans Board (HELB).

2.4.3 South Africa

Building and developing quality, sustainable, reliable, and resilient infrastructure supporting economic development and human well-being is one of the Sustainable Development Goals (SDGs) that South Africa must achieve by 2030 (UN Sustainable Development Goals, 2019). The National Infrastructure Plan (NIP) 2050 provides a strategic vision and plan that links the NDP's objective of inclusive growth to immediate outcomes. In response to NDP, the government prioritises infrastructure in boosting growth which required a vast amount of R847 billion for public infrastructure investment, which was later revised downwards to R813.1 billion (Tancott, 2014, cited in Makhathini, Mlambo and Mpanza, 2020). Moloi and Adewotan (2018) affirm that infrastructure is significant for faster economic growth and increased employment, promotes inclusive growth, boosts the citizen's income, and improves citizens' lives.

To affirm the importance of infrastructure for development, the South African government has identified critical provisions of infrastructure interventions such as spatial, energy, geographic, social infrastructure and knowledge, among others (Wasserman, 2019; Makhathini, Mlambo, and Mpanza, 2020). In June 2018, The South African President embarked on a target drive of US$100 billion in five-year investment towards infrastructure development. However, the skills development rate needs to be revised to include how the investment should be utilised.

During the dawn of democracy in South Africa, the government provided extensive infrastructure funding, with parastatals absorbing funding in some sectors. Nevertheless, since 2000, the private sector has been playing a great role in ensuring collaboration with the government. This was enabled when the South African government adopted the National Infrastructure Plan in 2012 (Frankson, 2018). Central to his developmental goals, South African President Cyril Ramaphosa has committed to ensuring that infrastructure spending is available with private sector assistance. The President's call was seen when the private sector in Johannesburg pledged to invest approximately R290 billion to spur economic development, create job opportunities and stimulate economic growth (Tralac, 2018). A report by StatsSA (2018) indicates a 6% increase in infrastructure spending from R8.8 trillion in 2016 to R9.4 trillion in 2017, which encouraged the government to collaborate more with the private sector.

Killian (2017) argues that South Africa has witnessed significant progress in fighting against the infringement of pupils' right to education in various ways. To enhance teaching and learning in South Africa, South Africa strives to improve and build facilities of high quality (Ruso, Filipović, & Pejović, 2017). The South African Government continues to reform the higher education and training sector in response to emerging issues to ensure the realization of the goals and aspirations of the country. Challenges associated with the South African higher education sector policy implementation outlined in the 2011 National Planning Commission (NPC) Diagnostic Report identifies poor infrastructure allocation, with inadequate funding resulting in poor and under-maintenance of infrastructure (Moloi & Adelowotan, 2018).

In funding infrastructure in HEIs, the South African government established an infrastructure and efficiency grant that is earmarked for existing infrastructure repairs and maintenance to improve teaching and learning.[1] Initially, the grant was meant to increase annually at a rate because of the grant reprioritisation to address the funding shortfall of student bursaries in the previous financial year, and that did not happen as planned; a budget cut implemented by the National Treasury resulted in a reduced percentage (DHET, 2022). The DHET acknowledged that the government and Post School Education and Training (PSET) sector could not fund the infrastructure alone. As a result, in 2018, President Ramaphosa announced the infrastructure fund, which addressed the need for finance between government and Development Finance Institutions (DFIs). The institutions include the Development Bank of Southern Africa (DBSA) and the private sector in partnership with the government, universities, and TVET colleges to support infrastructure development (DHET, 2018; 2019). With assistance from DBSA, DHET has set aside R7.584 billion for the 2022/23 financial year for PSET to stimulate inclusive economic development (DHET, 2022). Despite all this, the DHET Minister admitted that funds must be more adequate for the country's infrastructure needs.

The literature review reveals that well-developed, developing, and underdeveloped countries regard infrastructure as necessary for education and development (Tian et al., 2019; United Nations, 2018; Wasserman, 2019; Kayange, 2021). However, most countries experience challenges of low economic growth, which does not translate to economic development due to inadequate infrastructure funding. As a result, most countries opt to establish partnerships with the private sector. Regarding the funding of infrastructure in the higher education sector, various scholars in many countries agree that low infrastructure funding impacts higher education negatively (Ravi et al., 2019). Some well-developed countries have developed funding policies that have resulted in

[1] An 'earmarked grant', sometimes called a specific-purpose grant, refers to the funds a recipient receives and uses for a specific purpose only. Spending must be aligned with the conditions set by the funder, the government, among others (Masungure, 2021; Moyo & Mackenna, 2021).

increased infrastructure funding; however, inadequate infrastructure is still challenging (Fu & Henyeko, 2022).

2.5 Factors that Contribute to Non-compliance with Infrastructure Grant Requirements

Why is compliance with the funding conditions a challenge? Various scholars such as Reinsberg et al. (2021), Gehring & Lang (2020), Nzama (2019), and Moyo (2018) have documented some factors contributing to non-compliance with infrastructure funding conditions in institutions. The challenges that are identified include unrealistic, complex, and impracticable funding conditions; lack of proper and continuous monitoring to ensure value for money; poor governance and lack of consequence management; over-long procurement processes; lack of planning; failure to follow the institution recruitment processes; high turnover rates and lack of capacity; and other factors.

2.5.1 Unrealistic, complex, and impracticable funding conditions

Nzama (2019) and Grindle et al. (2021) argue that protracted compliance requirements within a short space of time, together with unrealistic and difficult funding conditions, may result in non-compliance. Some conditions require full comprehension of the history of the institutions and the extent to which the state can implement public policies before they are satisfied.

2.5.2 Poor governance and lack of consequence management

Poor governance in government institutions is one of the reasons for non-compliance, together with unachievable funding requirements funders set prior to spending the grant (Gehring & Lang, 2020; Nzama, 2019). Accepting the consequences of one's action may improve compliance in the organisation; however, the higher education sector experiences challenges, including a lack of consequence management. The Auditor General (AG) has called for improved public sector levels of accountability to implement the changes and ensure that the public funds are utilized effectively to benefit South African citizens (AGSA, 2021).

2.5.3 Lack of proper and continuous monitoring

Various authors such as Moyo (2018), Nhleko, and Inambao (2019); Kentikelenis (2021) argue that managers' lack of continuous monitoring of grants caused by inadequate and insufficient personnel negatively impacts compliance with grant conditions. Inadequately trained personnel constraints resulting from apartheid-generated inequities have manifested in financial management and institutional planning, resulting in a lack of proper monitoring.

2.5.4 Long procurement processes and planning

Unacceptably long supply chain management procedures and failure to set and follow processes and timelines while institutions are avoiding delays result in non-compliance. In addition, bid adjudication and evaluation committees struggle to arrange and honor regular meetings, negatively impacting decision-making processes and leading to non-compliance (Tjebana & Rachidi, 2018; Vento, 2021). Long procurement processes result in project costs escalating, and the project value increasing, which results in the organization paying more than the donor institution has approved, leading to non-compliance.

2.5.5 Failure to follow the institution's recruitment processes

Vento (2021) ascertained that temporary appointment of project managers creates uncertainty and unnecessary non-compliance where an institution may end up appointing personnel without proper skills. This negatively impacts project implementation and causes failure to comply with the recruitment process requirements.

2.5.6 High turnover rates and lack of capacity

The high turnover rate of key technical staff such as project managers and lack of capacity has resulted in the poor financial performance of government institutions, either underspending or overspending allocated funds. In most cases, these key

positions are replaced with less qualified officials, which negatively impacts compliance (Tjebana & Rachidi, 2018; Vento, 2021).

2.5.7 Deficiencies in financial control

Maina et al. (2016) posit that without proper financial control in an institution, there are no effectiveness and efficiency in operations, and it is difficult to ensure the reliability of both internal and external financial reporting and compliance with regulations. An institution must encourage adherence to policies and laws, and weak financial controls result in non-compliance.

2.5.8 Other factors

Reinsberg et al. (2021) and Tjebana & Rachidi (2018) note that political constraints and interference in administrative matters, which manifest as anti-reform preferences, can be one of the drivers of non-compliance. The unruly behaviour of the community members is sometimes politically driven, others are forced by socio-economic factors such as unemployment and poverty, and some are pure business owners who feel neglected during the planning process. This seems to be a general problem that cannot be solved immediately (Bourne, 2016). The use of the infrastructure grant for operational purposes such as paying employees' salaries, unexpected occurrences such as costs related to the Covid-19 pandemic, emergency projects which interrupt teaching and learning and are life-threatening to students and staff, and corruption are some of the other factors leading to non-compliance with the infrastructure grant (Tjebana & Rachidi, 2018; Moyo, 2018). Other factors include stakeholders' unruly behaviour by the community or local contractors. (Bourne, 2016).

2.6 Impact of Grant Conditions on Project Implementation

Among the most frequent non-compliance incidents are programme interruptions resulting from the institutions failing to implement conditions (Reinsberg et al., 2021). Non-compliance with the recruitment conditions due to the temporary nature of a

project manager appointment leads to poor planning, supervision, and management of construction work resulting in poor project implementation. Tjebana & Rachidi (2018) argue that spending the infrastructure funds on non-infrastructure costs, such as payment of salaries, reduces the amount available for infrastructure repairs, negatively impacting project implementation. Besides, having fewer funds available for infrastructure, non-compliance may result in adverse audit outcomes leading to the withholding of the funds by the Minister in terms of the CET Act (RSA, 2006), hampering infrastructure projects undertaken by a TVET college (DHET, 2019).

The PMG (2022) has repeatedly identified internal control deficiencies in efficient and effective infrastructure delivery, which still need to be resolved, resulting in infrastructure projects failing to realise their intended service delivery objectives. Management should apply internal controls to check on staff since they are not always available to monitor the department's activities; any system irregularity is immediately detected and corrected (Maina et al., 2016). This control system would guarantee proper management if effectively arranged and implemented.

It has been noted that the lack of competencies and skills of government officials, which may be exposed by the structure of the infrastructure grant conditions, causes projects not to be completed according to schedule quality specifications (Mokgethi & Van der Waldt, 2020).

2.7 Strategies to Improve Compliance with Infrastructure Funding Requirements in TVET Colleges

Compliance by the grant recipients may contribute positively to social change, resulting in more funding in states, higher education, local governments, and non-profit organisations (Drabczyk, 2016). If a TVET college council or management fails to comply with the funding requirements of money appropriated by Parliament, the Minister may withhold further payment to the college concerned (RSA, 2006). The CET Act 16 of 2006 (RSA, 2006) ensures that the Minister acts where there is non-compliance with the public funds. Furthermore, in May 1998, the Minister of Higher Education and Training established the Council on Higher Education (CHE) under the

Public Finance Management Act (PFMA) (Act 1 of 1999) and adhered to sound governance principles (DHET, 2019). Among the responsibilities allocated to CHE is ensuring compliance with regulations and legislation applicable to the sector.

Various scholars have reported on the strategies institutions may implement to enforce compliance. For example, Emam, Farrell, and Abdelaal (2016) argue that late responses and project approvals from donor institutions result in project construction delays when project managers have other work to execute. Funders should accelerate project approval and enhance processes and procedures with clear timelines to allow the beneficiaries to plan work adequately, thereby avoiding non-compliance. Further, Nhleko and Inambao (2019) and Drabczyk (2016) emphasise that lack of oversight and monitoring of infrastructure and related matters, sometimes caused by inadequate management, results in non-compliance, leading to infrastructure project failure. It is the responsibility of the donor to play an oversight role to ensure value for money and compliance rather than relying on the reports the institutions submit. Similarly, Willar et al. (2021) argue that the government's role is not to issue conditions and regulations but to monitor implementation to guarantee compliance. Ntim et al. (2017) support other scholars that establishing enforcement and compliance bodies that monitor compliance, governance, and reporting in institutions is the right direction. In sum, constant monitoring enhances compliance in the organisation.

Another way to enhance compliance is by producing comprehensive annual reports with disclosures relating to HEIs' financial performance and issues such as governance and risk management, among others (Ntim et al., 2017). Such disclosures may not enhance compliance only but may further attract the stakeholder support required to sustain institutional operations. The reliance on the few workshops DHET conducts can contribute to non-compliance; rather, part of the implementation strategy is a need for a series of training workshops and continuous training conducted for all grant management staff (Moyo, 2018; Moyo & McKenna, 2021). There is a need for the grant recipients to have written policies and procedures in place, such as standard operating procedures (SOPs), which provide institutions with activities necessary to execute tasks according to the requirements (Drabczyk, 2016).

Over and above the strategies mentioned, the Education, Training, and Development (ETD) Sector Education and Training Authority (SETA) and Financial Services SETA awarded the University of Johannesburg an R11 million grant to improve audit outcomes in TVET colleges (Burger, 2017). The grant allows the university to develop interventions to improve financial management skills for TVET colleges' financial professionals, targeting colleges with qualified disclaimers and adverse audit reports. Establishing the Department of Planning, Monitoring, and Evaluation (DPME) focused on the implementation of the NDP 2030 through the Medium-Term Strategic Framework (MTSF) is an important monitoring tool to ensure compliance (DPME, 2014, cited in Moyo & Mackenna, 2018).

2.8 Theoretical Framework

Various theories, such as institutionalism and agency theory, can be used to best explain compliance with funding policies in the HEIs. However, this study was underpinned by *policy implementation theory*. Hudson, Hunter, and Peckham (2019) affirm that policy progress or success depends on the implementation process; as a result, its failure is not due to its merit. The factors shaping and influencing policy implementation seem to be multifaceted and complex with public policies favouring problems that are characterised by interdependent factors making them difficult to solve. The rationale behind selecting policy implementation theory is based on the fact that the government has realised that there is a lot to be done in public institutions including HEIs to avoid policy failure, such as turning intentions into results by strengthening and supporting the policy implementation phase. On the persistence of policy failure, Hudson et al. (2019, p. 12) identified "overly optimistic expectations; implementation in dispersed governance; inadequate collaborative policymaking; and the vagaries of the political cycle as four contributors to policy failure". These contributors to policy failure were found to be very common in the literature review.

The theoretical framework selected further recognises that implementation is challenged by ensuring a delivery degree of consistency at lower levels attributed to political factors where policy formulation is at the national level (Sausman, Oborn, &

Barrett, 2016). It is well known that intervention success differs between locale A and locale B. The TVET Colleges are situated in different geographical areas, with different environments, cultures and political dispensations which make it difficult for TVET Colleges to behave the same. This is supported by Sausman et al. (2016) when describing how general rules and guidelines are shaped and tailored for local implementation by drawing on the "local universality" concept. No matter where governance concentration is, implementation will always depend on the local context, but the crucial question is how policymaking authorities respond to such a reality. To determine the success or failure of a policy, Lipsky (1980 cited in Sausman et al. (2016) came up with a *"street-level bureaucrat"* instrument where officials at higher levels should have some grasp of what happens at lower levels.

The TVET colleges need support from the national office to ensure compliance with funding requirements especially where colleges believe that some grant conditions are complex and impractical. The main challenge is the type of support and whether it will yield positive results or not; however, whatever support mechanism is chosen it requires close liaison with those in the implementing agencies (Allcock, 2015 cited in Sausman et al., 2016). Furthermore, support involves assessing existing capacity to deliver and where improvement is required, and then choosing the best way to build capacity. Gold (2017) argues that the implementation support interventions are sometimes contradictory, and as a result, problem-solving, managing and regulating and capacity building are the identified purposes of intervention.

The chosen theoretical framework gives direction in exploring the experiences, decisions and historical origins that influenced the behaviour of TVET Colleges' management when implementing infrastructure grant conditions set by the DHET. In addition, it supports the issue of compliance and provides some form of strategies that the institutions such as TVET colleges can move away from non-compliance. in detail how the TVET colleges view the current situation when it comes to implementing grant conditions.

2.9 Conclusion

This literature review analysed the importance of infrastructure for development and in the higher education sector. Additionally, the chapter compared different countries about the importance of infrastructure for development and how it is funded in the higher education sector. However, the literature review indicates that the sector is mostly characterised by inadequate infrastructure. The allocation and spending of the infrastructure grant in South African TVET colleges and the impact of low expenditure on the budget were discussed. The chapter further discussed the reasons for non-compliance with the infrastructure grant conditions by TVET colleges. The research questions were presented, such as the impact of non-compliance on project implementation and the recommended strategies to overcome the challenges. The theoretical framework underpinning the study was further discussed.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The literature review in Chapter Two focused on the importance of infrastructure in higher education institutions and the impact of non-compliance with infrastructure grant conditions on project implementation. Chapter Three highlights the research methodology applied in this study. It focuses on the techniques used in identifying, collecting, selecting, processing, and analysing data (Mills and Gay, 2016). This chapter discusses research approaches, design, data collection tools, sampling, data processing and analysis, reliability and validity, ethical considerations, and study limitations.

3.2 Research Approach

In defining the research approach, Leavy (2017) regards it as a plan, processes, and procedures that the researcher would apply during data collection, analysis, and interpretation. Bryman (2016) and Leavy (2017) differentiate between three main research approaches that researchers can use in a study, namely qualitative, quantitative, and mixed methods. This study employed a qualitative approach. As defined by Creswell and Creswell (2018, p. 247), a qualitative approach is "an inquiry process of understanding a social or human problem based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting". The researcher selected this study approach based on the urge to discover a detailed description of the relevant phenomena and subjectively understand them in their unique context (Bryman, 2016).

The rationale behind selecting a qualitative research approach, according to Bryan (2016) and Creswell & Creswell (2018), is that the researcher seeks to explore the reason behind a particular behaviour or the root cause to understand the phenomenon better. This is done while allowing the study participants to put forward their views and opinions regarding what is discussed. When the research questions have unknown variables to the researcher, Creswell & Creswell (2018) posit that a qualitative approach

is more relevant. This type of approach makes it easier for the researcher to explore the phenomenon.

The qualitative approach applied in this study assisted the researcher in understanding the experiences of the managers of two different TVET college in complying with the infrastructure funding conditions within a similar context. The literature review indicated that funding infrastructure in the education sector is still a challenge and compliance with the infrastructure grant requirements seems to be very complex. In this way, the narrative is very rich and based on knowledge and reality. As a result, closed questions that provide a 'yes' or 'no' as response could not address the root cause of the phenomenon (Bryman, 2016; Leavy, 2017). Hence the research questions and literature review used in this study provided an understanding of infrastructure grant conditions using a qualitative research strategy.

3.3 Research Design

Mills and Gay (2016) and Leavy (2017) emphasise that in the research, the researchers' main focus is on methodology as well as paradigm which are important in selecting the best-fit strategies that can be employed to achieve the study goal. Bryman (2016) lists the main research designs as quasi-experiments, surveys, cross-sectional case studies, and longitudinal designs. This study employed a case study approach. Mills and Gay (2016) posit that researchers employ the case study when their studies focus on exploring the bounded system phenomena, such as an event, person, or programme. Appropriateness of the case study in this research is supported by how people behave in real situations and allow them to understand conceptions than looking at the presented complex theories (Cohen, Manion & Morrison, 2018). Furthermore, the theoretical framework chosen and the problem under investigation informed the case study research design. The study was conducted in two TVET colleges, and the researcher compares the research participants' understanding of compliance with infrastructure grant conditions. As a result, a collective case study was the best fit because it allowed a possibility of more vital interpretation and better theorising (Leavy, 2017).

Regarding the research paradigm, this study supported the interpretivist epistemological idea where a researcher believes that the manner and procedures used to study the social world differ from those of natural sciences (Bryman, 2016). This research approach enabled the researcher to get closer to the research participants at the TVET colleges to understand the nature of their reality and how other people in similar settings communicate it (Creswell and Creswell, 2018; Cohen et al., 2018). The ontology of the study stands for constructivism since it looks at the relationship between social entities and social actors. Additionally, the participants' experience in the study phenomenon contributes in providing the responses which the researcher used as an architect of knowledge (Leavy, 2017; Cohen et al., 2018).

3.4 Research Tools and Application

Data generation tools refer to the instruments the researcher used to collect data from the study participants and should be closely related to the research questions (Leavy, 2017; Cohen et al., 2018). Creswell and Creswell (2018) note that when a researcher collects data, the following steps should be followed: recognizing the research participants and their respective sites; obtaining permission to be in the venue and engage participants; deciding or planning on the type of information required; data collection and recording; as well as managing collected data to safeguard against ethical issues.

Mills and Gay (2016) identify five data collection tools used in qualitative research: observations, questionnaires, interviews, document reviews, and audio-visual materials. The interviews were based on a semi-structured questionnaire, allowing research participants to respond freely to the open-ended questions. The researcher conducted face-to-face interviews guided by the semi-structured questionnaire to ensure the consistency of interviews and the ease of analysing data. The academic literature indicates that the interview structure should enable the participant to raise issues and shape the whole discussion, allowing probing and exploring of responses (Creswell & Creswell, 2018). Face-to-face interviews enable the researcher to focus on the verbal prompts and identify and understand the participants' facial expressions when responding to questions. Furthermore, the researcher may complement the audio

recording with the interview while writing down the critical issues for the respondents' responses and the probing areas.

3.4.1 Document analysis

In document analysis, a researcher critically assesses the documents that are already drawn up with valuable research information relevant for the study, as a result, they do not have to be transcribed (Creswell & Creswell, 2018). Patton (2015, cited in Morgan, 2022) refers to any document that contains text and requires a reader to draw conclusions about the presented evidence serves as a potential source for analysing qualitative research. The researcher reviewed several documents prior to and during the data collection process such as DHET National Norms and Standards for Funding TVET Colleges; Continuing Education and Training Act 16, 2006 (CET Act 16 of 2006), as amended; the Constitution of the Republic of South Africa; and the National Development Plan 2030 (NDP 2030) to name a few. The researcher considered the mentioned documents when compiling the questionnaire and timeously referred to them during the interview with the respondents. The documents emphasised funding of infrastructure in TVET Colleges, conditional infrastructure grants, treatment of non-complying HEIs and the action to be taken by the DHET Minister among other issues. Although the participants were not informed that such documents would be used during the interview process, most of the respondents were very quick to refer to them before the researcher mentioned them.

3.4.2 The interview processes

Firstly, the researcher informed the Wits Faculty of Commerce, Law, and Management and sought an introduction letter indicating that the researcher was undertaking the study in partial fulfillment of the degree of Masters in Management in Monitoring and Evaluation. Secondly, the researcher wrote a letter to selected TVET colleges seeking permission to conduct the study, with the introduction letter from the university, the research proposal, and the proposed schedule for the interview attached. The researcher indicated the reason for undertaking the study, how the study would benefit the TVET colleges selected and the Department of Higher Education. Thirdly, face-to-face

interviews were conducted in the participants' offices to allow one-on-one discussion and free exchange of information. However, circumstances (see below) forced the researcher to conduct telephone interviews with some of the participants.

The researcher designed the interview to last at least 30 minutes, but those with the deputy principals lasted over 50 minutes and the principal over one hour. The series of interviews took two weeks to complete, allowing the researcher to reflect on the information that emerged, and start drawing themes. With the participants' consent, the researcher audio-recorded the interview while taking some notes to ensure that she entirely focused on interaction and probing, and followed the responses' emotions, tone, and feelings very closely. Creswell (2017) argued that a researcher could combine audio recording and taking notes during data collection to have a backup should a challenge occur with the recording.

One TVET college granted the researcher permission to conduct the study interviews from 14 September to 14 October 2022. The researcher fell sick and was admitted to hospital on 14 September 2022 and could not manage to conduct the study within the dates provided by the college. The researcher negotiated other dates, but it was difficult due to busy schedules at the college. The college's three senior managers were unavailable for a face-to-face interview, which resulted in telephone interviews. Bryman (2016) maintains that in a qualitative study, the researcher may conduct telephone interviews that involve open-ended questions to elicit the participants' views and opinions.

3.5 Sampling

In research, sampling occurs when a researcher selects a smaller group of the entire population of interest and collect data that will answer the research questions for the study (Bryman, 2016). Purposive, naturalist, and snowball sampling are the strategies that the researcher can apply to participants to gain detailed information about the phenomenon (Patton, 1990, cited in Jason & Glenwick, 2016; Leavy, 2017). The study employed a purposive sampling strategy, sometimes called non-probability sampling. The research participants were not randomly sampled but were sampled purposefully

to ensure that relevant participants were recruited to respond to the research questions. The rationale behind selecting purposive sampling is based on the information the study requires and the specific characteristics of participants, such as experience and knowledge about the administration of infrastructure grants and projects.

Based on the problem statement, the study rationale, and the research questions, the researcher selected Tshwane North and Sedibeng TVET colleges in Gauteng Province. These TVET colleges are infrastructure grant recipients and help the researcher in save travelling costs during data collection. Fourteen study participants selected from each of the two TVET colleges consisted of the principals, deputy principals: finance, deputy principals: corporate, assistant directors: finance, assistant directors: human resource management, assistant directors: supply chain management, and infrastructure project managers. Participants selected were deemed relevant for the study based on their positions and expertise in infrastructure grant administration projects at the college.

The researcher obtained permission to conduct the study interviews in the two selected institutions. Before the interview, the researcher sent introductory emails to the participants, narrating the research aims briefly and attaching a consent form and a questionnaire. All participants had experience of more than three years in the field. *The table below shows the list of participants and their designation.*

Table 2: List of study participants

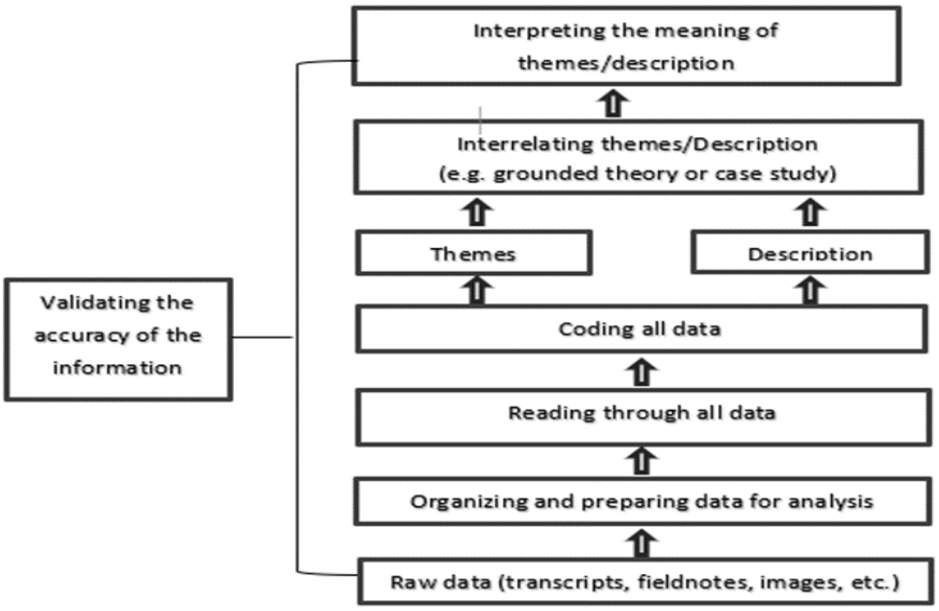
No	*Designation*	*College A*	*College B*	*Total*
1	Principal	1	1	2
2	Deputy Principal: Finance	1	1	2
3	Deputy Principal: Corporate	1	1	2
4	Assistant Director: Finance	1	1	2
5	Assistance Director: Human Resource Management	1	1	2
6	Assistant Director: Supply Chain Management	1	1	2
7	Infrastructure/Facilities Manager	1	1	2
	TOTAL	**7**	**7**	**14**

3.6 Data Analysis

The researcher analysed data according to the five stages of thematic framework analysis as posited by Bryman (2016): familiarisation, coding, generating themes, naming themes, and writing up/interpretation. Data analysis starts with planning concepts and arranging data around identified themes, which helps to create more comprehensive databases for research (Creswell, 2018). As a familiarisation process, the researcher repeatedly read all the responses to grasp the data before sifting and sorting. The researcher further verified data to check whether some flaws or mistakes affected the meaning of participants' responses (Bryman, 2016). In coding, the researcher broke down data into components and assigned data labels to each element. Additionally, the researcher thematically identified and maintained the phrases and quotes to build more relevant evidence for the study. Creswell and Creswell (2018) believe that themes may emerge during the data analysis. Identifying and keeping

recurring themes enabled the researcher to begin drawing experiences, ideas, attitudes, and values that are significant to the study.

Figure 1: A graphical illustration of the data analysis process for the study



Source: Creswell & Creswell (2018)

3.7 Reliability and Validity

The qualitative study phenomenon is based on realities that create knowledge between the researcher and the respondent. As a result, the study findings will not be quantifiable and statistical but seek understanding and illumination in similar situations (Creswell & Creswell, 2018). Furthermore, the paradigm in a qualitative study is shown by using the phenomenon's interaction, interpretation, and creativity skills.

This study acknowledges and recognises that every researcher should be concerned with validity and reliability during design and analysis and strive to ensure the quality of the study. The researcher starts by discussing the validity and reliability, considering the credibility and, most notably, how the study findings will be generalised. Data collection and analysis that the researcher applied in a constructivist paradigm rely

heavily on the researcher and the respondent creatively and rigorously constructing knowledge and reality based on the social interactions between the research subject and the natural world (Bryman, 2016). As a result, the probability of questioning reliability in the qualitative study may be high, because of numerous realities surfacing from the discussion.

The starting point leading to this study's validity and reliability and its findings is to acknowledge that multiple realities most people think and have in mind are valued by constructivism. It is essential to use various methods of data sources to determine the validity and reliability of diverse and multiple realities (Mills & Gay, 2016). This study employed two sources of data collection, and the primary source includes respondents selected carefully based on their technical knowledge in the administration of infrastructure grant funds and management of related projects. Additionally, secondary sources were used in the literature review to dig for information about infrastructure funds and their importance to education. This study applied semi-structured interviews, which allowed the respondents to detail the key issues they were experiencing regarding infrastructure grant administration in the workplace. Respondents further pointed out some cases from the secondary sources to enlighten the realities that emerged from the discussion, enabling the researcher to conclude the findings.

3.8 Ethical Considerations

Bryman (2016) and Mills and Gay (2016) posit that during the data collection process, the researcher must develop and maintain trust with the participants and should behave in a trustworthy manner. In support of the statement, Creswell and Creswell (2018) emphasise the importance of meeting the required ethical principles by the researcher when conducting educational studies to avoid unnecessary difficulties in the process.

The researcher obtained an official letter from the University of Witwatersrand which supported the introduction. The letter explained that the university permitted the researcher to conduct the study and indicated that the research was solely for academic purposes. The university's official letter also enabled informed consent prior to

commencing the study. The introduction to the respondents showed the level of confidentiality the researcher would maintain throughout the study and assured that the study findings would be used for academic purposes and to assist the DHET in developing an infrastructure funding policy. The researcher further assured the respondents of no harm in that process, such as asking provocative questions during the interview. The researcher found it necessary for participants to be made aware that participation in the study was voluntary and that freedom to withdraw was guaranteed. The researcher obtained permission to record the interview from the participants and assured them that the data collected would be used and stored in a safe place for a certain period where unauthorised persons could not access it. The participants were also informed that names would not be included in the report, and by so doing, the researcher guaranteed confidentiality and anonymity throughout the research process. The participants then signed the informed consent form to participate in the study.

During the interview engagement, the researcher practiced active listening and the interview was interrupted only during the clarity-seeking questions to the respondents.

3.9 Limitations

Cohen, Manion and Morrison (2018) argued that a researcher cannot exercise any control over the study limitations but acknowledged that it might affect the study results. One of the limitations of this study is the lack of information regarding infrastructure grants in TVET colleges. Despite infrastructure being the driver of economic development and growth and ensuring quality education, the researcher struggled to obtain relevant literature for the study. Secondly, the researcher conducted the study at a selected TVET college in Gauteng Province, and the study findings will only be generalized to the selected two colleges. Thirdly, unavailability of time to contact certain participants due to work commitments resulted in telephone interviews in such cases. Fourthly, due to costs that the researcher might have incurred, the study was conducted within the researcher's proximity. Lastly, there is a high risk of bias from the researcher since the study participants were sampled purposively.

3.10 Conclusion

This chapter explained and justified the research methodology and design that the researcher used in this study. The research paradigm and its relevance as well as sampling methods were identified, justified, and explained. The researcher also explained the data generation methods, sampling, and analysis. The importance of ethical issues in research and how it was ensured throughout the research interview process were also discussed. The study limitations were identified and explained. The next chapter presents and discusses the findings.

CHAPTER 4: DATA PRESENTATION AND DISCUSSION

4.1 Introduction

The previous chapter presented and discussed the research methodology and design the researcher used in undertaking this study. Chapter Four presents the data analysis and interpretations which the researcher discusses through the themes and sub-themes generated from the data provided by the research participants from semi-structured interviews questionnaires and reviewed documents. The researcher used verbatim quotations made by the research participants that serve to reveal the respondents' experiences and emotions (Creswell & Creswell, 2018). The researcher used Chapter Two which presented the literature review and the theoretical framework when interrogating the data and informing the study findings. The document analysis as mentioned in Chapter Two was used in the discussion.

The research questions, literature reviewed, and the theoretical framework were used to analyse the study findings. The study applied a policy implementation theoretical framework through an organisational lens. The primary research question for the study was: What are the management experiences of Gauteng TVET colleges regarding compliance with the DHET infrastructure grant conditions? This question was broken down into three secondary research questions, which were: What challenges are brought by infrastructure grant conditions that may lead to non-compliance by Gauteng TVET colleges? To what extent do the challenges affect the implementation of infrastructure projects undertaken by Gauteng TVET colleges? Are there strategies that Gauteng TVET colleges recommend in dealing with such challenges to ensure compliance with the infrastructure grant conditions?

4.2 Biographical Information

To comply with the ethical considerations as outlined in Chapter Three, the researcher used College A and College B when describing the research participants institutions.

COLLEGE NAME	COLLEGE A	COLLEGE B
Principal		
Gender	Female	Male
Experience in a position	+5 years	+5 years
Deputy Principal Finance		
Gender	Male	Male
Experience in a position	+5years	+5 years
Deputy Principal Corporate		
Gender	Male	Male
Experience in a position	+5 years	+ 5 years
Assistant Director Finance		
Gender	Male	Female
Experience in a position	+ 3 years	+ 3 years
Assistant Director Human Resource Management		
Gender	Male	Female
Experience in a position	+3 years	+ 3 years
Assistant Director SCM		
Gender	Female	Male
Experience in a position	+ 3years	+ 3 years
Assistant Director Infrastructure		
Gender	Female	Female
Experience in a position	-3yrs	-3yrs

The above table indicates gender and experience in years in the position the respondents occupied. Both principals had worked at TVET Colleges and occupied their positions for more than five years. The researcher did not go beyond five years' experience since the aim was to find those experienced in managing the infrastructure grant and it was first introduced in 2018. The Deputy Principals Finance and Corporate had been occupying their positions since the infrastructure grant was introduced. The Assistant Director for infrastructure had experience of less than three years at the time of the interview, however, they had occupied similar positions in other government institutions. Based on the experience in TVET Colleges, it is unlikely that they received training on the infrastructure projects as arranged by the department during the 2018/19 and 2019/20 financial years (DHET, 2019). All other Assistant Directors had been in the department for more than three years but less than five years.

4.3 Data Presentation and Discussion

4.3.1 Challenges brought by infrastructure conditions that may lead to non-compliance

Most study participants had similar experiences of challenges regarding the infrastructure grant conditions that were imposed by the DHET. Although they acknowledged that there should be conditions for the earmarked grant that all TVET colleges must comply with, they felt that some of them resulted in non-compliance. The most common challenges that the respondents identified are as follows: non-refurbishment of heritage buildings not accommodated by the infrastructure grant conditions (leads to non-compliance); infrastructure grant conditions that lead to non-compliance; resignation of project managers and additional re-advertisement costs; lack of monitoring by the DHET; infrastructure grant conditions leading to student protests; and low expenditure by TVET colleges.

4.3.1.1 Infrastructure grant conditions lead to non-compliance

TVET college managers felt that the DHET missed other important issues when setting the grant conditions and it would have been much better if the policy implementers were part of the team during the planning process. The Principal of TVET College A said:

> *Some facilities in our TVET college are not fit for purpose, and the infrastructure grant does not accommodate such buildings which directly impact teaching and learning negatively. The college may end up using the funds on that structure and it becomes a non-compliance. However, I cannot blame the DHET as the aim is to avoid misuse of the funds, such as what happened during the 2007 recapitalisation process.*

This was supported by the Deputy Principal in TVET College A who said:

> *TVET colleges use numerous bank accounts, and if the official responsible for transferring funds is faced with commitments, some of which may be external, and*

unable to transfer the funds within three days, it becomes non-compliance. DHET conditions push TVET colleges not to comply.

A similar issue of non-compliance was raised by the Deputy Principal of Finance in College A, who said:

The conditions do not clarify how TVET colleges should treat interest accumulated from the grant. When TVET colleges utilise it for purposes other than infrastructure, it becomes non-compliance. DHET needs to review the conditions.

The Deputy Principal further explained and said:

Infrastructure grant conditions raised the project escalation costs due to the turnaround time for project approval by DHET, leaving the colleges with the option of implementing projects without approval, contradicting the infrastructure grant conditions.

This was supported by the Principal of TVET in College A:

DHET informs the college principals when the funds are transferred to the main bank account, but internal and external factors may cause the principal not to be aware of the funds transferred resulting in the late transfer of the funds to the infrastructure account. This condition is impractical, the Department should allow TVET colleges at least 7-10 days to transfer the funds into the infrastructure grant bank account.

The Assistant Director in College A said:

Some TVET colleges inherited previous and historical buildings that are not conducive to teaching and learning, and the current infrastructure grant does not accommodate the refurbishment. Maybe DHET should be at the grassroots level and realize that there is no way TVET Colleges may avoid non-compliance.

The general feeling of the respondents in this theme was that the infrastructure grant conditions may attribute to non-compliance due to their rigidity and impracticality. In

the literature review, Nzama (2019) posits that unrealistic, complex, and impractical funding conditions result in non-compliance with funding requirements. The TVET colleges are regulated by the CET Act 16 of 2006 (RSA, 2006) as amended. To logically comprehend the issue of non-compliance with the infrastructure grant, it is essential to revisit Section 63 of the Act which states that earmarked capital funding is always conditional since it is designed for specific capital investments integrated into TVET colleges' strategic plans. This assisted when the researcher had to triangulate data from the interviews. Sutcliffe & Bannister (2021) cite that the DHET, with cabinet support, is driving the initiative to ensure that unutilised government facilities are accessed for continuing education and any other government purposes which benefit the communities This can be a success if the DHET reviews the grant conditions and includes such facilities. Theoretical framework is on policy implementation which leads to non-compliance if not implemented correctly.

Some responses were in line with the theoretical framework when the issue of the "s*treet-level bureaucrat"* instrument was brought into the discussion where higher levels officials should have some grasp on what is happening at the ground level (Sausman et al., 2016).

4.3.1.2 High staff turnover rate

The study participants indicated that a high staff turnover rate of project managers in TVET colleges results from the infrastructure grant condition of three-year contract appointments. Project managers resign from TVET colleges for job security. The main challenge with staff turnover is the lack of continuity in the areas of work when the responsible employee leaves the organisation (Emam et al., 2016). The appointment of new people delays project implementation as the staff must adapt and understand the complex work process of TVET colleges (PMG, 2019). The Principal of College A said:

> *The contractual appointment leads to the resignation of the project managers due to permanent positions. The college must recruit again, and the recruitment process takes more than 90 days, and at that time the projects are halted.*

The Deputy Director of Corporate in College A said:

> *Therefore, a contractual appointment is dangerous to TVET colleges because employees focus on finding a permanent job, affecting work quality. In addition, the recruitment process is expensive and time-consuming resulting in student protests when projects stop.*

The Assistant Director of Human Resource Management in College A said that *"contractual jobs may lead to corruption, especially when employees know a contract is about to expire and leave the organisation"*.

In this theme, the study participants feel that the DHET should extend contracts of the Project Managers. They maintain that non-compliance will always be an issue since the Project Managers who are familiar with work and environment left the college while the projects are being implemented. It is difficult to recruit a Project Manager on contract based on their scarce skills, and sometimes the college opts for less qualified person, which is a non-compliance. Infrastructure grant conditions require TVET colleges to appoint project managers with construction management qualifications on a three-year contract to be paid from the grants (DHET, 2019).

As cited by Drabczyk (2016) in the literature review, project managers possess scarce skills that are important for the country to move forward. When an employee resigns, TVET colleges must start the recruitment process again, adding unnecessary expense. Drabczyk (2016) and Reinsberg et al., (2021) maintained that contract appointments lead to employee resignations, causing organisational frustration and adding unnecessary recruitment costs. Tjebana and Rachidi (2018): Vento (2021) argue that in most cases, these key positions are replaced with less qualified officials, negatively impacting compliance.

4.3.1.3 Infrastructure grant conditions result in low spending of the funds by TVET leading to the withholding of the funds by DHET

The CET Act 16 of 2006 as amended provides the DHET Minister with powers to withhold the funds should a college does not comply. The study participants argued that the DHET is always a result of non-compliance. Theoretical framework emphasises the issue of compliance when implementing policies avoiding the consequences that may follow.

The Principal in College A said:

> *As TVET college management, we feel that the DHET is micromanaging everything. DHET does not trust the colleges' Chief Executive Officers (CEOs) that it has appointed. DHET is challenged by inadequate personnel, and so are the TVET colleges, but colleges are not allowed to make financial decisions regarding the institutions they are managing.*

In support of the statement, Sutcliffe, and Bannister (2021) posit that capacity constraints on personnel and inexperienced staff appointed to deal with infrastructure maintenance result in lower expenditure in the HEIs.

The Principal of College B supported this and said:

> *The TVET colleges were not given enough time to ensure that human capacity is sufficient to implement infrastructure projects. TVET colleges operate uniquely in different political environments. The external environment, such as political factors hinders project continuation. When TVET Colleges fail to spend funds as DHET expected, the National Treasury implements a budget cut that affects the entire sector, over and above CET Act allows the Minister to withhold the funds allocated to a non-spending TVET College.*

The Assistant Director of Supply Chain Management in College A said:

> *Sometimes DHET approves the projects late, which gives a problem to the college Supply Chain processes due to project price variations which delay project implementation and lead to lower spending of the funds which the Department always emphasise the consequences.*

The Assistant Director of Project Management in College B said:

> *Internal staff at a college needs continuous capacitation by DHET or implementing agencies may be an option to support TVET Colleges and increase spending. Slow spending of the infrastructure funds is a threat to TVET Colleges, if the Minister withholds the funds what will happen to this dilapidating infrastructure? The Department must provide some form of support if we are working towards the SDG4 target of quality education.*

The study participants felt that the infrastructure grant conditions are the contributory factor for the low expenditure percentages of TVET Colleges. The DHET takes too long to approve maintenance plans submitted by TVET Colleges; over and above that, some colleges are struggling to complete credible maintenance plans resulting in non-spending of the funds. When the DHET approves maintenance plans, the expectation is that the funds spent by TVET colleges would be aligned with the maintenance plans approved (PMG, 2020).

The researcher acknowledges that TVET Colleges management is aware of the documents that guide the sector such as the National Development Plan and Sustainable Development Goal 4 (SDG4) for Quality Education as cited in the literature review. Due to a shortage of personnel on the DHET side, approval takes a long time, which increases project costs. In addition, TVET colleges follow the procurement processes, which sometimes take longer than expected, and the project costs escalate (Vento, 2021). The theoretical framework further elaborated on the issue of supporting the institutions through implementing agencies and further raised the

type of human resource capacity that is needed to ensure success in policy implementation (Sausman et al., 2016).

Furthermore, Section 41G (4) of the CET Act 16 of 2006, as amended (RSA, 2006), emphasises the need for monitoring and evaluation in the TVET colleges sector and ensures that the authorities are given enough support using the available public resources ensuring competency and to raise the standard of the public TVET colleges.

4.3.1.4 Infrastructure grant conditions result in community unrest and student protests

Almost all respondents mentioned the issue of political interference resulting in student protests and community unrest. Students in the TVET colleges are aware of the infrastructure grant allocated since 2018, yet not much change has occurred in college infrastructure due to the rigidity of infrastructure grant conditions. The funds are meant to repair, maintain and refurbish TVET college infrastructure to improve teaching and learning (National Treasury, 2018). If colleges are not maintained, students lack trust in college management and protest. The Deputy Principal in College A said:

> *If infrastructure repairs and maintenance projects are not implemented, students think that the college management is not doing the work or used funds on non-infrastructure expenses and resort to protesting.*

The Deputy Principal of Finance in College B said: *"The day DHET understand the stress and frustration TVET colleges experience during student protest will be when they involve TVET colleges during planning".*

The Principal of College A said:

> *Delay in project implementation due to complex conditions attracts unnecessary community and student protests. Politicians also get an opportunity to accomplish their self-serving interests and the whole thing is blown out of proportion. Maybe it's*

time the Department reviews the grant conditions and tries and intervene by establishing a stakeholders' management office to attend to the colleges.

The Assistant Director of Human Resources Management in College A said that *"the worst-case scenario about the project delays is when students protest and vandalize existing infrastructure".*

During the interview in this theme, the respondents' facial expression showed a great concern and did not hide that they fear for their lives. The respondents admitted that the colleges' reputation is at stake due to continuous protests. Also, trust between the students, staff, and management is affected. The Minister of Higher Education and Training admitted that poor infrastructure development was among the reasons for the student protests in all provinces except Mpumalanga and the Western Cape provinces (DHET, 2017).

4.3.2 The extent to which the challenges affect the implementation of infrastructure projects undertaken by Gauteng TVET colleges

The study participants highlighted the extent to which the challenges affect the implementation of infrastructure projects as there are project delays and failure, political and community unrest, and prolonged procurement processes.

4.3.2.1 Project delays and failure

Most respondents agreed that the infrastructure grant that the DHET set, especially the approval of projects, delays implementation resulting in student protests. In support of the literature review, Emam et al. (2016) argue that late responses and project approvals from donor institutions result in project construction delays when the project managers have other work to execute. The Principal of College A said:

DHET is micromanaging TVET colleges. Application for approval to DHET is good, the problem starts when the application results delay project implementation. The

worst-case scenario is when DHET complains of inadequate personnel. Approval should be done at the college level.

The Assistant Director of Infrastructure in College A said:

Can the Department get rid of maintenance plans approval and establish proper control measures to ensure that funds are utilised as expected? The reason most TVET Colleges are struggling with spending the grant is the applications delay.

When TVET colleges spend the funds lower than expected, National Treasury implement budget cuts which reduces the amount allocated for infrastructure repairs and maintenance. This affects refurbishment in the already TVET colleges that are dilapidating. In support of this, the Deputy Principal of Finance in College B said:

Project delays result in low spending by a TVET College which affects the future allocation by the DHET. In the meetings with the Department, the importance of spending the funds was emphasised. If the National Treasury implements a budget cut, the allocation for TVET colleges with low spending percentages will be reprioritised to colleges with dire needs of infrastructure funds. TVET colleges and DHET should work together to ensure that spending is improved.

The above theme shows that the respondents believed that the conditions set for the infrastructure grant resulted in delays in project implementation leading to TVET colleges struggling to spend the funds. The literature review has indicated that when TVET colleges spend less funds than the DHET expectation, the National Treasury cuts the budget for the current or the next financial year. At the beginning of each financial year, the DHET issues infrastructure budget allocation letters to TVET colleges showing the funds to be transferred to the colleges (DHET, 2019). Also, if TVET colleges need additional infrastructure funds during the year, the DHET reduces the budgets of the low-spending colleges which perpetuates delays.

4.3.2.2 Leads to political and community unrest

Most respondents indicated that tension between communities and TVET colleges is evidence of poor governance which is mostly caused by grant conditions. The respondents felt that the DHET neglects them, and their lives are in danger due to politics which disrupts the administration. The respondents felt that political matters and unrest should be addressed by the DHET in collaboration with political leadership. McConnell (2015, cited in Sausman et al., 2016) in the theoretical framework mentioned politics as one of the factors in policy failures and sustained political support of policy implementers should be given preference. The Assistant Director of Project Management in College A said:

> *These groups of people, called business forums have unique community expectations and perceptions of the project implementation. They want to be involved in every project; some have a corrupt mindset and expect TVET colleges to remove or ignore the grant conditions. If their request is neglected, project implementation stops, affecting teaching and learning at TVET colleges.*

The Assistant Director of Project Management in College B said:

> *Business forums require 30% of the project value, and sometimes the contractor has no choice but to give them for peace's sake, but this affects project implementation and leads to the site abandonment*.

The Principal of College A said*:*

> *Political interference sometimes is the reason the contractors abandon sites, and one cannot leave out that the infrastructure grant conditions can be the reason. This leads to unnecessary community protests.*

The respondents in this theme voiced that contractors' and project teams' lives are at risk and some are being killed due to infrastructure projects. When visiting the Coastal TVET College in 2020, the Minister of Higher Education and Training called on the South African Police Services (SAPS) and the community members to act swiftly and

arrest the killers of the Head of Infrastructure who was shot and killed at the college (DHET, 2020). Bourne (2016) emphasised that the individual or group has the power that may permanently stop the project. In the literature review, Moyo and Mackenna (2021) maintained that political interference in the form of business forums is becoming the norm in government institutions, and TVET colleges are not excluded. If not treated with care, this results in site abandonment by contractors. Mr. Steve Mommen, the Director at DHET, reported to the Portfolio Committee on the progress regarding the construction of the new campuses in TVET colleges and highlighted that construction sector challenges stemmed from civil unrest and business forums that obstruct projects (PMG, 2019).

4.3.2.3 Infrastructure grant conditions results in prolonged procurement processes

The respondents indicated that the process TVET colleges follow when appointing service providers takes too long, resulting in the project not being completed within the planned time, and overlaps with the following financial year. Evaluation and adjudication procurement processes are usually prolonged which delays project implementation. It becomes more complicated when the appointed service providers fail to meet the deadlines because of a lack of skills. "Most of the contracted service providers do not have the proper requisite skills and/or resources, implying that they take longer than they should to complete their projects" (Tjebana & Rachidi, 2018, p. 611). The Assistant Director of Supply Chain Management in College B said:

> *Over and above the rigid infrastructure grant conditions, there are procurement processes that take too long to be finalised. TVET colleges cannot bypass these processes, therefore if the DHET can relax the conditions that also delay project implementation, colleges will be left with the procurement processes only.*

In support of the above respondent, the Assistant Director of Supply Chain Management in College B said:

> *When you consider the time taken by the DHET to approve the projects and add long procurement processes, it can take more than a year to start implementing a project. This may result in additional costs associated with inflation.*

The Principal of College A said:

> *Some of the Senior management team members are part of the supply chain committees, they are not easily available for scheduled meetings. If the deadlines as agreed in the previous meetings are not met due to some form of delays from the DHET, it is difficult finding them to attend another meeting. The whole process is delayed even further.*

The respondents felt that the infrastructure grant conditions prolonged the long procurement processes. Project planning is difficult because meeting the deadlines is not guaranteed while trying to comply with the DHET set conditions. Tjebana and Rachidi (2018) state that procurement committees such as evaluation and adjudication committees do not meet regularly which delays project implementation since the decisions cannot be taken immediately. Also, bureaucratic bottlenecks may delay supply chain processes when employees take a long time to comply.

4.3.3 Strategies to improve compliance with infrastructure funding requirements in TVET colleges

During the interview process, the researcher engaged the study participants who provided strategies that may improve compliance with infrastructure grant conditions that the DHET expects from the TVET colleges. The strategies listed are as follows: improve project approval turnaround time; continuous monitoring by the DHET; adequate and continuous training; establishment of stakeholder relations office; appointment of infrastructure personnel; and developing an infrastructure funding policy.

4.3.3.1 Improve project approval turnaround time

The study participants felt that the DHET contributes to non-compliance due to the lengthy time taken before TVET colleges receive feedback on applications for project approval. They voiced that if the DHET improves their turnaround time for project

approval, TVET colleges would implement the projects timeously and this may reduce the level of non-compliance.

The Assistant Director of Infrastructure Management in College A said:

> *To expedite the process of implementation, projects approval should be done at a college level with the inclusion of the Council appointed by the Minister, the DHET official, and TVET colleges employees.*

This was supported by the Principal in College A:

> *The national office, DHET, should come up with a strategy to fast-track approval of project applications. If it can't increase staff, it should establish a committee comprised of college representatives responsible for approval. Failing which, colleges be given a responsibility to approve*.

The Principal of College B said:

> *The DHET should provide adequate training to TVET colleges regarding completing maintenance plans. Turnaround time in terms of approval is very long. DHET needs more personnel to assess maintenance plans submitted by 50 TVET colleges with 264 campuses, resulting in colleges spending the funds without permission. Clear approval timelines should be provided to TVET colleges to reduce non-compliance.*

Supporting the statement from the literature review, Emam, Farrell, and Abdelaal (2016) maintain that funders should improve project approvals and enhance processes and procedures with clear timelines to allow the beneficiaries to plan work adequately, thereby avoiding non-compliance.

4.3.3.2 Continuous monitoring by the DHET

The general feeling of the study participants was that paper or desktop monitoring is not enough and the DHET should conduct physical monitoring in TVET colleges.

The Principal of College A said:

> *The CET Act 16 of 2006, as amended, governing the TVET colleges emphasises that the Minister must ensure that monitoring takes place, especially in the institution where public funds have been allocated. Although TVET colleges submit quarterly and monthly reports to DHET for compliance purposes, colleges would like to see DHET officials on campuses monitoring the projects and engaging colleges on the critical issues that result in non-compliance*.

The Deputy Principal of Finance in College A said:

> *HET focuses more on quarterly and monthly reporting done on paper by TVET colleges, but we need their visibility to discuss issues affecting infrastructure grant and project execution.*

The Assistant Director of Finance in College B said that "*quarterly and monthly reporting is for compliance, and it is not enough if DHET needs better outcomes, physical monitoring may produce good results".*

Nhleko and Inambao (2019) and Drabczyk (2016) maintain that it is the responsibility of the donor to play an oversight role to ensure value for money and compliance rather than relying on the reports the institutions submit.

In this theme, the study participants acknowledged that the DHET monitors TVET colleges through the submission of the monthly and quarterly reports, however, they felt that physical monitoring should take place which would help in addressing the bottlenecks that hinder project implementation and compliance. The literature reviewed indicated that the Department of Planning, Monitoring, and Evaluation focuses on the implementation of the NDP 2030 through the Medium-Term Strategic Framework (MTSF) which is a monitoring tool to ensure compliance in government institutions (DPME, 2014). The principal quoted one of the documents reviewed for the study which the researcher applauds.

4.3.3.3 Adequate and continuous training

The importance of continuous training to ensure compliance was revealed when the study participants engaged the researcher during the interview process. When the infrastructure grant was introduced in 2018, the DHET conducted training on infrastructure maintenance and repairs for all TVET colleges through the National Infrastructure Asset Management System (Sutcliffe & Bannister, 2021). The training was conducted to equip TVET colleges with what the DHET expected in terms of project implementation and compliance. However, the general feeling of the study participants was that the training provided was inadequate to execute infrastructure projects.

The Assistant Director of Supply Chain Management in College A said:

> *When the infrastructure grant was introduced, training was provided for two days at three intervals, and no other training after, it was not enough. The grant was new at that time with its complicated conditions. As TVET colleges, we would like DHET to arrange more training, especially during implementation, to ensure that we are doing things correctly.*

The Deputy Director of Finance said:

> *Continuous training is required, especially since TVET colleges experience a high turnover rate due to the nature of the appointment of Project Managers. In addition, the DHET keeps on changing the conditions and only communicates through circulars. Communication is limited, and colleges need training and engagement to clarify the conditions and requirements.*

The Deputy Director further said that *"without proper and adequate training provided by the National Office, non-compliance will always be an issue in TVET colleges"*.

The Principal in College A emphasised by saying:

> *TVET colleges need training, DHET indeed adopted circulars as means of communicating and it is good, however, sometimes the colleges are sitting with questions that could have been answered if some form of training was considered. Training can be provided either regionally or virtually, it would be appreciated if DHET can consider that.*

This theme is also supported by the literature review and the theoretical framework of the policy implementation strategy. Moyo (2018) and Moyo & McKenna (2021) cite that reliance on a few workshops that the donor-funding institutions provide can contribute to non-compliance; as a result, part of the policy implementation strategy is the need for a series of workshops and training conducted for all grant management staff.

4.3.3.4 Establishment of stakeholder relations office

The respondents complained about project disruptions by the community members, some of whom call themselves business forums. The unruly behaviour of the community members is sometimes politically driven, others are forced by socio-economic factors such as unemployment and poverty, and some are pure business owners who feel neglected during the planning process. This seems to be a general problem that cannot be solved immediately. The Deputy Director of Corporate in College A said:

> *The community feels entitled to the projects in such a way that if they are not considered, they disrupt project implementation. It's a plea to the Department to assist TVET colleges in handling this challenge most delicately.*

The Assistant Director in College B said*:*

> *Some contractors give forum members a certain percentage of money to avoid disruptions, promoting wrongdoing. The Department must intervene, at least by*

developing a policy or guidelines to assist TVET colleges, or establishing an office that will deal with such matters.

The Assistant Director of Supply Chain Management in College B said:

Community or business forums disrupt the project implementation until the contractor abandons the site. TVET colleges should involve either a community representative or a Local Councillor. The business forums introduce themselves as community representatives while they represent themselves. The Department must intervene.

The literature review supported the statement as Tjebana and Rachidi (2018, p. 605) note that "it is important that for infrastructure programs and projects to be sustainable, communities and stakeholders must be consulted right from the planning phase through implementation until completion".

The Principal in College A said:

The issue of business forums is nationwide and found mostly in public institutions. It is unfortunate that it endangers people's lives and disrupts core teaching and learning. However, if it is managed correctly, it yields positive results. If DHET in conjunction with TVET colleges can establish an office that will deal with stakeholders, comprises of DHET officials, TVET colleges including College Councils, and local Councillor or a Community Liaison Officer. Our hopes are with the DHET, we need to improve access to TVET colleges and increase enrolment as NDP 2030 requires, but only if DHET and TVET colleges are not prepared to work together.

The statement was supported by the Deputy Principal of Corporate in College B, who said that "*the community should be involved during the project planning phase as it will make them feel that they are part of the process*".

The study participants' message to the DHET was to come up with a professional way to handle business forums and the community when it comes to policy implementation. The literature review discussed the issue of stakeholder management as a way of ensuring policy implementation and improving compliance. Bourne (2016) and

Ewurum (2019) posit that the project team in an organisation must build and maintain relationships with stakeholders by developing and implementing effective communication strategies for project success. Such strategies will address and alleviate any misunderstandings the sector has witnessed over the years.

4.3.3.5 Appointment of infrastructure personnel

The study participants acknowledged that it is difficult to increase personnel to execute infrastructure grant and related duties, but there is much that the department can do to combat the situation such as working with SETAs and using the grant to increase personnel. This can be done to ensure compliance. The Principal of College A said:

> *As TVET colleges we fully understand that it is difficult for the DHET to increase personnel since the Minister of Finance always speaks about reducing the wage bill. However, we believe that a small percentage of infrastructure grants allocated to colleges can be used to increase capacity, or interest earned on the grant accounts be used to employ additional staff. TVET colleges experienced capacity constraints before the infrastructure grant was introduced, and the situation is worsened by the introduction of the infrastructure grant.*

The Deputy Principal of Finance in College B Principal supported the Principal of College A by introducing SETAs and said*:*

> *DHET should negotiate with SETAs and increase interns to do the work in TVET colleges. The college is not coping with the volume of work, if DHET cannot increase personnel, let SETAs come on board. South Africa's rate of unemployment is very high, therefore, SETAs can provide food on the table to the unemployed and sharpen the skills required in every job opportunity.*

Du Plooy and Du Preez (2022) confirm that SETA internships play a huge role in reducing poverty while providing TVET college employees with the ability to execute work where there is inadequate personnel in colleges.

The Deputy Principal of Finance in College A said:

> *The conditions allow TVET colleges to appoint only the Project Manager and do not include the appointment of additional personnel for infrastructure projects. One person manages and administers more than R50 million rands projects, which makes it difficult for the TVET colleges to comply. The DHET should support TVET colleges by allowing the additional personnel to be paid from the grant.*

The Chief Director of Financial Planning and Management at the DHET, Izak Joubert, reported to the Parliamentary Monitoring Committee that the lack of capacity and inexperienced staff to deal with the planning and execution of maintenance plans cause non-compliance (PMG, 2019).

The Assistant Director of Human Resource Manager in College B said:

> *Increasing staff reduces unemployment and inequality while ensuring the execution of work and improving compliance. A small percentage of this grant should be allocated to increase personnel.*

The study participants in this theme frequently referred to the literature review and the documents reviewed and believed that as the NDP 2030 advocates, increasing personnel will not only combat employment and reduce poverty but will provide unemployed graduates with skills required by the labour market. The SDG4 2030 target 4.4 states that in providing quality education, TVET colleges should provide youth with the skills required in the labour market. In addition, Section 63 (4) of the CET Act 16 of 2006 (RSA, 2006) states that the DHET must support the public TVET colleges with the necessary resources to ensure adherence to the public resources' requirements.

4.3.3.6 Developing an infrastructure funding policy

As discussed in the literature review, inadequate funding of the sector and the absence of an infrastructure funding policy has resulted in the participants developing an urge to participate in policy development and implementation. The participants further felt

that developing an infrastructure funding policy will reduce non-compliance. Currently, the DHET does not have a policy to fund infrastructure in TVET colleges and maintenance plan applications and other factors, such as enrolment numbers, are used to determine allocations to TVET colleges. The Principal of College B said:

> *The college is grateful for infrastructure grants since TVET colleges experienced backlogs in maintenance; however, funding is not sufficient for the college infrastructure needs. DHET requires TVET colleges to submit maintenance plans for three years, but colleges are allocated far less than what they expected. This resulted in spending the funds on the most important projects, which some were not approved, resulting in non-compliance.*

The Principal of College A said:

> *Current infrastructure allocation methodology disadvantages colleges with less enrolment. Less enrolment does not mean fewer infrastructural maintenance issues. DHET should fast-track the development of an infrastructure funding policy if non-compliance is an area of concern. The policy will clarify how the funds will be allocated equitably and what is expected from TVET colleges.*

The current TVET colleges funding norms do not cater to infrastructure, as a result, the DHET applies a funding methodology that is deemed fit at that time which disadvantages certain colleges. The Principal of College A further said:

> *TVET colleges should be involved when the policy is formulated and implemented. During the consultative stage, I would recommend sharing the draft policy with the TVET colleges Principal as they would populate it to the college officials.*

The Deputy Director of Corporate in College A pointed out non-compliance in the Department:

> *When will the DHET comply with the CET Act in determining the funding norms and standards for TVET colleges infrastructure? It's been five years since this grant was*

introduced, and the funding methodology differs yearly, we are willing to assist and make inputs in the policy.

The theme supports the theoretical framework that underpinned the study on policy implementation. The study participants pointed to the CET Act 16 of 2006, as amended, where the DHET Minister together with the Minister of Finance determined the minimum norms and standards to fund TVET colleges. If there is an infrastructure funding policy, the TVET colleges believe that there will be transparency in funding methodology. As a result, the TVET colleges believe that policy development as an intervention may solve non-compliance issues. Drabczyk (2016) states that it is important for donors and grant recipients to have written policies and procedures, such as Standard Operating Procedures (SOPs), which provide institutions with activities necessary to execute tasks according to the requirements.

4.4 Conclusion

The research findings described above were generated from the data through questionnaires, interviews, and document reviews. The management at TVET colleges had stated their experiences regarding the infrastructure grant conditions as set by the DHET. However, most conditions create more challenges than the desired outcome. TVET colleges acknowledge that the sector's main challenge is inadequate funds to refurbish facilities. Although conditions are set, some result in non-compliance and need to be reviewed, while others need to be removed. The strategies outlined by the respondents indicate that DHET should work harder to assist TVET colleges. The next chapter presents the study's conclusions and recommendations.

CHAPTER 5: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

The previous chapter focused on the researcher's presentation and analysis of the data findings generated in the field. Chapter Five presents the study summary, conclusions, and recommendations aligned with the research questions the researcher presented at the beginning of the study. The recommendations also consider the literature review and the theoretical framework identified in Chapter Two. Chapter Three discussed the data generated by the researcher through semi-structured interviews and questionnaires in the field.

5.2 Study Summary

Chapter One summarised the entire study, including the key research questions and problem statement. In addition, the chapter outlined the study aim and objectives, purpose, and the structure of the research report.

Chapter Two focused mainly on the literature review on infrastructure funding and management experience in complying with the grant conditions. The literature reviewed provided a foundation regarding the phenomenon that the researcher investigated. The chapter further discussed and presented the theoretical framework that underpinned the study.

Chapter Three discussed the research approach, research design, research tools and application, sampling, data analysis, reliability and validity, ethical considerations and study limitations.

Chapter Four presented the study findings based on the data generated through semi-structured interviews and document analysis. The researcher further analysed and systematically presented the findings that emerged under the different themes.

Chapter Five presents the study summary, conclusions and recommendations aligned with the research questions the researcher presented at the beginning of the study.

5.3 Conclusion

The study conclusions are generated from the findings in the previous chapter, Chapter Four. Regarding experience in compliance with infrastructure grants, the participants believed that their direct involvement in planning and setting the grant conditions, since they implement them, might yield positive results. The recurrence of themes and other findings may imply that TVET colleges should urgently audit the reasons behind the existing infrastructure grant compliance challenges and conduct feasibility studies regarding remedial actions. It should be taken into consideration that due to a limited sample, the study results may not be conclusive. Still, they provide suggestions for reducing non-compliance with the infrastructure grant conditions set by DHET.

5.3.1 Challenges experienced by TVET colleges when complying with infrastructure grant conditions

The first finding was on the challenges the study participants encountered when implementing the infrastructure grant conditions. Data generated from the study provided four findings. First, the study participants viewed the infrastructure grant conditions as some are complex and impractical which is the main reason for non-compliance. Second, the general feeling of the study participants is that infrastructure grant conditions result in high staff turnover rates. Third, the study participants viewed low spending as a result of infrastructure grant conditions which force the DHET to withhold the funds if spending is not improved. Fourth, the study participants raised a concern that the conditions attached to the grant lead to community unrest and student protests. The general conclusion is that the DHET should review the conditions and include infrastructure grant project implementers in the process to ensure compliance as expected. Some of the grant conditions are a stumbling block to compliance. In addition, the recurrence of themes may imply that TVET colleges should urgently audit the reasons behind the existing infrastructure grant compliance challenges and immediately apply the remedial actions.

5.3.2 The extent to which the conditions affect infrastructure project implementation

The second finding was based on how the conditions impact the infrastructure projects' implementation. Three themes were generated from this finding. The study participants viewed that the conditions affect the implementation in such a way that there are project delays and failures. The participants further explained the risk these grants put them in such as political and community unrest. Finally, the participants indicated that the procurement process takes too long and additional time is added as the college strives to comply with the infrastructure grant conditions. The conclusion that is made from this finding is that the damage is deeper than one thinks as these conditions are seen to endanger people's lives and is against quality education as the SDG4 requires. As a result, the DHET should act promptly on the issues raised.

5.3.3 Strategies to improve compliance with infrastructure funding requirements in TVET colleges

The third finding required the participants to provide strategies that TVET colleges can apply to improve compliance with infrastructure grant conditions. The participants mentioned these strategies as follows:

- Participants felt that the DHET should improve project approval turnaround time to avoid delay.
- Participants acknowledged monthly and quarterly reporting as a form of monitoring, however, the DHET should play an oversight role by visiting TVET colleges and having face-to-face discussions on the issues facing colleges.
- The study participants required the DHET to provide adequate and continuous training.
- The study participants felt that the establishment of a stakeholder relations office may assist TVET colleges in managing stakeholders who disrupt infrastructure projects.
- The study participants required the DHET to consider increasing the capacity to execute infrastructure projects to be paid from the grant.

- The study participants felt that the current infrastructure funding methodology the DHET uses when allocating the funds to TVET colleges disadvantages some colleges; as a result, there is a need to develop an infrastructure funding policy for the DHET.

Based on the finding themes, it is recommended that TVET colleges should work together with the DHET and discuss the strategies which they would want the DHET to implement to improve compliance.

5.4 Recommendations

Compliance in public institutions is an area of interest which invites different scholars to conduct empirical research. The main purpose of this research was to explore managers' experiences in complying with the infrastructure grant conditions at selected Gauteng TVET colleges. The following are the recommendations made to address the challenges that the literature review and study participants raised to improve compliance with infrastructure grant conditions in TVET colleges.

5.4.1 Involvement of the TVET colleges in setting the infrastructure grant conditions

As policy implementers, the TVET colleges should be involved in setting the infrastructure grant conditions since they will provide practical scenarios that could cause non-compliance. This will also assist in identifying the grant conditions which are impractical to implement and try to find a way of moulding them to become implementable.

5.4.2 Continuous monitoring

Seeing that TVET colleges are struggling to comply, over and above the paper monitoring whereby TVET colleges submit monthly and quarterly reports, the DHET should provide project monitoring and discuss the bottlenecks that lead to non-compliance.

5.4.3 Provision of training

The TVET college officials in different capacities that are responsible for implementing infrastructure grant projects should be provided with adequate training and the strategies that they should implement to ensure compliance. It is recommended that the DHET conduct training, preferably provincially and at different intervals, and invite other stakeholders that will assist in sharpening knowledge of TVET colleges.

5.4.4 Establishment of stakeholder office and management teams

The DHET should assist TVET colleges with the establishment of a stakeholder's office and management teams. The teams may include the college officials, the college council members, a DHET official, the Regional Manager where possible, and the community liaison officer. They should also be provided with clear instructions on what is expected of them.

5.4.5 Provision of adequate and skilled personnel

The TVET colleges are managing huge projects with a total allocation of billions of rands. As TVET colleges have raised a concern regarding capacity constraint challenges, the DHET should allow TVET colleges to recruit additional staff to execute the projects. The TVET colleges should be allowed to set aside a certain percentage from the infrastructure budget and increase capacity.

5.4.6 Developing the infrastructure funding policy

As the CET Act 16 of 2006 requires, the DHET along with the TVET colleges should ensure that an infrastructure funding policy is developed and used to allocate funding equitably. The TVET colleges should also ensure that during the consultation stage of policy development, they make contributions to ensure that the policy will be implemented correctly.

5.5 Chapter Summary

The study aimed to explore managers' experiences in complying with the infrastructure grant conditions at selected Gauteng TVET colleges. The study's aim was achieved. The qualitative research revealed that TVET colleges point to the DHET as the main contributor to non-compliance through the complex infrastructure grant conditions. Challenges such as insufficient training, lack of monitoring, lack of training, low spending, community unrest and student protests are encountered because of infrastructure grant conditions. As a result, different strategies may assist in improving compliance that the DHET expects from TVET colleges. Consequently, this study recommends that TVET colleges should be involved in setting the infrastructure grant conditions, the provision of training, continuous monitoring, increasing capacity, and developing an infrastructure funding policy.

The study was limited to two TVET colleges that were identified due to non-compliance, however, further research into the phenomenon with the colleges that comply is recommended. The TVET colleges that comply with the infrastructure grant conditions may provide strategies that the colleges can use to ensure and maintain compliance.

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