

**The role of public-private partnerships in developing logistics  
infrastructure**

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## **Abstract**

South Africa's rail logistics infrastructure has deteriorated over the years, and the development of reliable logistics infrastructure is important to its economic competitiveness and trade facilitation. However, persistent funding and capacity constraints within the public sector have resulted in an increased reliance on public-private partnerships (PPPs) as strategic instruments for delivering key infrastructure projects. This research sought to get a better understanding of the role of PPPs in developing logistics infrastructure in South Africa by focusing on their forms, challenges, adoption dynamics, and funding mechanisms.

The research followed a qualitative, exploratory approach to get insights into the experiences and perspectives of 19 individuals operating in the South African logistic infrastructure space from both public and private sectors.

Drawing on existing literature that provided insights from other developed and developing countries, the study positioned PPPs as a solution within the broader context of critical infrastructure resilience and socio-economic development. The findings revealed that PPPs can enhance efficiency, cost effectiveness, drive innovation, and deliver infrastructure projects in time and within budget through risk sharing and leveraging private sector expertise. However, the success of PPPs in developing countries is often constrained by institutional weaknesses, political uncertainty, and limited access to funding.

Therefore, sustainable PPP implementation in South Africa requires transparent governance frameworks, adaptive procurement models, and integrated financial instruments that align public sector accountability for socio-economic development goals with private sector investment incentives ensuring a return. Moreover, the study contributes to the discussion on sustainable infrastructure financing by demonstrating how PPPs can reinforce the resilience and performance of South Africa's rail logistics infrastructure.

**Keywords**

logistics infrastructure, public–private partnerships, infrastructure investment, rail infrastructure

## Plagiarism Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry to this research.

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## 1. Introduction

This section will unpack the research problem and the purpose for conducting research on the chosen topic. Furthermore, insights will be drawn from existing theoretical literature and business publications to substantiate the choice of research topic.

### 1.1 Research Problem

Emerging economies such as South Africa need to have efficient logistics networks to unlock economic growth (Department of Transport, 2023). The economic activity of South Africa is geographically dispersed across the country including mining, manufacturing, agriculture, and automotive industries. Due to the large quantities of product that need to be transported over long distances, rail transport has been preferred. Therefore, there is a reliance on freight rail and efficient port terminals to export competitive products because it is safe and cost-effective (Department of Transport, 2023).

According to Transnet SOC Ltd (2024), the port terminal's annual report indicates that export volumes decreased compared to the previous year (2023) emphasising the economic impact of logistics infrastructure inefficiencies. Zou et al. (2022) support this by indicating that investment in infrastructure fosters investment-led growth, which positively impacts the country's GDP through increased exports contributing to economic growth. This is supported by Department of Transport (2023) expressing that the "South African economy is deeply dependent on the national rail and ports infrastructure to perform efficiently" (p. 11).

The inefficiencies are exacerbated by the deterioration of the South African logistics infrastructure because of a lack of capital investment by Transnet (TFR), highlighted in the company's "Annual Financial Statement for 2024" (Transnet SOC Ltd., 2024). Governments often shift its attention towards new infrastructure development projects or non-infrastructure initiatives, which leads to the neglect and deterioration of existing infrastructure (Casady et al., 2020). Therefore, it is evident that TFR which is the sole rail transport service provider in South Africa has paid little attention to its' role to provide quality rail logistics infrastructure (Park, 2020). Consequently, this

necessitated the government to invite the private sector to participate in addressing the infrastructure development problem (Business Unity South Africa, 2024).

Despite the public sectors' interest in Public Private Partnerships (PPP), the problem lies with the new governance and commercial challenges they will experience (Zhang & Leiringer, 2023). Furthermore, this is because of poor governance practices from the public sector which can be exposed by the involvement of the private sector that will bring new strategies of approaching governance, procurement, and infrastructure operations. Therefore, the role of PPPs must be clearly understood to ensure that the correct approach is used to successfully complete logistics infrastructure projects (Osei-Kyei & Chan, 2016).

According to Casady (2021), there is a need for infrastructure development globally which requires a large amount of investment to ensure its success. However, a gap remains in the body of knowledge regarding the role of PPPs and how they can contribute to achieving this (Casady, 2021). Additionally, changes in regulation due the implementation of PPPs in various countries has created different views and preferences on the adoption.

## **1.2 Purpose statement**

The research aims to investigate the role of public-private partnerships (PPP) to enhance the development of logistics infrastructure in emerging economies. The research will focus on railway infrastructure projects as it is the most efficient and cost-effective mode of transport for bulk cargo and large volumes (Liu & Song, 2020). The objective is to understand the roles and responsibilities of the various stakeholder, variables influencing PPPs, benefits and success factors, and challenges of PPP models to gain insights on how these models can help bridge the gaps in the development of logistics infrastructure. Although there is existing literature from an international context in countries such as China, UK, Spain, Portugal, and Australia (Wang et al., 2018); this research seeks to add to the body of literature in the context of South Africa.

## **1.3 Theoretical contribution**

The existing body of knowledge provides insights into the characteristics of Public-Private Partnerships, including the reasons why partnerships between the public and

private sectors are established and the benefits thereof (Karaba et al., 2023). In addition, this is supported by Casady (2021) stating that although there is a need for infrastructure development through PPPs, the lack of knowledge on the role it plays. Therefore, this research seeks to add to the existing body of knowledge by closing this gap.

Below is Figure 1, a conceptual framework created by the author to map out the flow and sequence of steps for conducting the research. Additionally, the flow is aligned to the research questions provided in chapter three of the study. The concept of PPPs is very broad and widely used globally as a mechanism for the public sector to collaborate with the private sector on infrastructure projects Casady (2021). Therefore, the framework illustrated below seeks to ensure that the research gathers relevant insights that will answer the research questions.

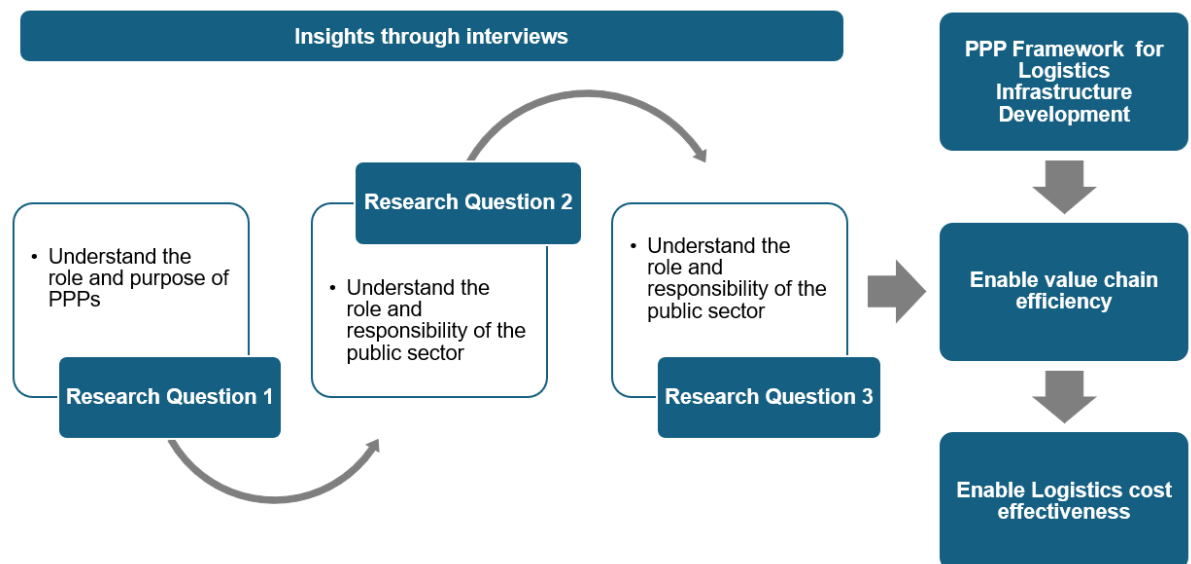


Figure 1: Conceptual Framework for the Research

Source: Author created

#### 1.4 Business contribution

South Africa's logistics system is in a crisis, impacting various industries that rely on efficient and cost-effective ecosystems enabled by logistics infrastructure (Department of Transport, 2023). Consequently, industries such as mining, agriculture, and manufacturing are affected by the deteriorated rail infrastructure (Transnet SOC Ltd., 2024). Moreover, these industries play a crucial role in growing

the South African economy and contributing to job creation (Department of Transport, 2023).

Therefore, the government seeks to explore collaborations with the private sector to combat the crisis by establishing Public-Private Partnerships to develop, maintain, and operate rail logistics infrastructure (Department of Transport, 2023). This is due to the financial crisis that SOEs such as Transnet find themselves in and requires the private sector to provide funding for infrastructure projects. In May 2025, the South African minister of finance Enoch Godongwana emphasised the need for private sector participation in his budget speech (Godongwana, 2025).

### **1.5 Conclusion**

In the above section, the analysis of the problem and the reasons why there is a need for this research to add to the current body of research were discussed. Furthermore, the following section is the literature review that will cover the specific concepts and will explain the technical detail of the research topic.

## **2. Literature review**

In this section, the specific concepts of logistics infrastructure and Public-Private Partnerships will be covered. Furthermore, it will draw upon insights from existing literature to explain the technical details of the research topic and identify the relationship between the different research constructs.

### **2.1 Logistics Infrastructure**

Countries rely heavily on logistics infrastructure as an important enabler of domestic and international economic activity and trade (Osei-Kyei & Chan, 2016). This is supported by Dhamija (2022), who states that the development of infrastructure is important for emerging economies. According to Bouraima et al., (2023) the real-world problem for African rail infrastructure is the lack of investment. Consequently, this led to the condition of the old railway lines deteriorating and traffic shifting away from rail to road transport (Bouraima et al., 2023).

In addition, the development of logistics infrastructure through the expansion and modernisation of railways and ports infrastructure can lead to increased efficiencies (Department of Transport, 2023). Furthermore, other countries such as China have benefited from investment into critical infrastructure including railways, ports and roads (Lee et al., 2022). It is important for emerging economies such as South Africa to invest in the development of logistics infrastructure to increase cargo volumes moved through railways, ports and roads. According to Park (2020), there is a positive relationship between the availability of quality logistics infrastructure and export flows.

Therefore, developing countries could benefit from the development logistics infrastructure as it enhances economic productivity through increased trade and global competitiveness (Park, 2020). This is achieved by establishing system, networks and facilities that enable a smooth flow of goods, the provision of services, and the timely use of information across the supply chain. Furthermore, the development of new and upgrading existing infrastructure is achieved through public-private partnership in which the public sector plays a planning role and provides innovation and efficiency (Almeile et al., 2024). Therefore, the partnerships have created an evolution in the development and maintenance of logistics infrastructure integrity. This is done by introducing new funding models, governance checklists to

ensure compliance, and measure performance based on output to help manage, track and monitor infrastructure projects.

Furthermore, logistics infrastructure is important for developing countries such as South Africa because it is the enabler for economic development through industrialisation and increased trade (Dhamija, 2022). This takes into consideration that economic development relies on the interconnectedness of various infrastructure, made possible through investment and cross sector collaboration (Liu & Song, 2020). Therefore, logistics infrastructure play an important role in enhancing domestic and international trade considering the interdependencies between road, rail, ports, and communication systems.

Considering the role that logistics infrastructure plays in South Africa, particularly by connecting industries such as mining, manufacturing, agriculture to global markets through roads, railways and ports (Memari et al., 2025). Additionally, logistics infrastructure that is functioning well support the economic competitiveness of developing countries, helping them reduce transaction costs (Liu & Song, 2020). However, South Africa's logistics crisis indicates that the poor infrastructure can have negative impact on economic growth and investor confidence (Memari et al., 2025).

To address the challenges, Public-Private Partnerships is mechanism that has been identified as a potential solution that brings oversight from the public sector and, innovation and funding from the private sector (Whiteside, 2020). Furthermore, PPPs facilitates and enhances the integration of technology, sharing of risk, and long term contract agreement that are based on performance output (Memari et al., 2025). Moreover, in South Africa, infrastructure has come under scrutiny due to the increased vulnerability to economic volatility, adverse weather conditions, and governance instability (Liu & Song, 2020).

Therefore, in a South African context, logistics infrastructure development is not just the physical structural construction, but it encompasses other intangible elements such as balancing economic efficiency and social inclusion through the collaboration of the public and private sectors

### **2.1.1 Critical Infrastructure**

The term Critical Infrastructure, can be described as essential asset that enables economic and social well-being activities (Liu & Song, 2020). Therefore, infrastructure such as a country's transportation system; plays an important role in ensuring the cost-effective and efficient movement of goods through the value chain which positively impacts the economy (Liu & Song, 2020). Furthermore, it is crucial for critical infrastructure not to suffer from continuous and lengthy disruptions due to significant economic consequences. However, a robust and resilient transport system provides the ability to adapt and recover from logistical disruptions to its normal operating state and mitigate financial consequences (Dui, et al., 2021). Therefore, safeguarding critical infrastructure and implementing recovery measures is essential to maintain efficient logistical flows.

Over the past several years, Africa's railway infrastructure has deteriorated significantly due to a lack of investment which exacerbated the economic impact of poor transport infrastructure (Bouraima et al., 2023). Furthermore, redeveloping or refurbishing the damaged infrastructure can lead to direct economic costs and add to the loss of revenue due to operational inefficiencies (Du et al., 2023). To avoid unnecessary costs for infrastructure users and the economy, it is crucial to consider regular condition monitoring and maintenance given the magnitude of the ecosystem the infrastructure supports.

South Africa's rail infrastructure is an enabler for economic growth as it plays an important role in fostering cost-effective and efficient logistics system (Department of Transport, 2023). Therefore, this emphasises the significance of ensuring that the country's rail infrastructure remains in an optimal condition to directly support the various key sectors that drive economic activity through the South African logistics network. Moreover, it allows for a smooth flow of goods within a value chain to enhance trade capabilities and industrial productivity (Zou et al., 2022).

Additionally, there is more to critical infrastructure than only its physical structures such as the rail network in South Africa. Beyond this, there are systems and technology, and institutional support that ensure infrastructure integrity and resilience (Liu & Song, 2020). Therefore, critical infrastructure should be seen as an enabling ecosystem and should be protected from redundancy. However, George et al. (2024) provides new insights on what is required to address infrastructure deterioration, maintain integrity and develop resilience.

### 2.1.2 Infrastructure Investment

Infrastructure plays an important role as an economic driver for countries, particularly developing ones that strive to move up the economic value chain (Zou et al., 2022). To achieve this, countries such as South Africa should prioritise investment in logistics infrastructure to enhance geographic connectivity and foster an economic advantage from the efficient movement of goods through the value chain. Additionally, enhanced connectivity through infrastructure can yield significant benefits for the dispersed South African economic activity to enable cost-effective and efficient logistics flows, and sustainable economic growth (Zou et al., 2022).

Although infrastructure investment is primarily the responsibility of the government through state-owned enterprises, the private sector's involvement can accelerate the pace at which investments are made (Zou et al., 2022). Therefore, collaborations in the form of public-private partnerships are crucial for infrastructure investment in developing countries. Foreign direct investment (FDI) is an alternative source of funding for the development of infrastructure and can enhance the trading capabilities of partner countries by facilitating exports and imports (Liu et al., 2020).

Furthermore, countries such as China and the USA with developed economies support infrastructure projects in emerging economies through FDI to stimulate economic growth. Additionally, the South African government stated in the publication "Roadmap for the Freight Logistics System in South Africa" (Roadmap) that investment in infrastructure is required to support the manufacturing, mining, and agriculture industries to unlock economic growth (Department of Transport, 2023).

However, in developing countries, infrastructure investment is limited to the availability of funding and institutional inefficiencies (Whiteside, 2020). Therefore, many countries rely on PPPs as an alternative mechanism to financing, implementing and executing logistics infrastructure projects. In the South African context, where the public sector does not have funds available to upgrade and develop new infrastructure, it relies on PPPs and other forms of private funding to execute infrastructure projects (Almeile et al., 2024).

Moreover, investing in infrastructure, particularly rail logistics helps enhance the national economic competitiveness and sustainable growth for developing countries (Almeile et al., 2024). Therefore, infrastructure investment would help address

logistical challenges such as inefficient logistics systems, high logistics costs, and insufficient logistics capabilities. Considering the challenges that many governments in developing countries face, there is a reliance on public-private partnerships (PPPs) models for investment by leveraging private capital and expertise (Zou et al., 2022).

According to Almeile et al, (2024), investing in infrastructure development projects through PPPs enables the public sector to leverage private funding and expertise, while maintaining regulatory oversight. However, Whiteside (2020) argues that when governments explore private investment through PPPs, it changes the role of the public sector from an outright service provider into a contract manager role. Consequently, in a South African context, this change creates an environment that disrupts the monopoly by promoting competition for private investors to think beyond profits.

Additionally, private sector investment in logistics infrastructure through PPPs can yield benefits such as efficiencies. Although complex for logistics infrastructure projects, this type of investments are long term and involve numerous stakeholders from both the public and private sectors (Memari et al., 2025). Moreover, PPPs introduce challenges such as governance and accountability, which are unfamiliar to the public sector that is influenced by political volatility and limited institutional capacity. This is relevant in a South African context, in which infrastructure PPP projects are affected by procurement delays and financial instability from the public sector.

## **2.2 Public-Private Partnerships**

PPPs involve the collaboration of two or more organisations from different business sectors to achieve societal and economic objectives (Vogel et al., 2022). Additionally, Whiteside, (2020) adds to this definition highlighting that PPPs are long terms contract agreements with the responsibility for designing, financing, constructing, and often operating lies with the private sector and the public sector providing oversight and supervision. Furthermore, the description of PPPs can be substantiated by the long-term relationships that are formed between the public sector and the private sector through collaboration (Tan & Zhao, 2021). The body of knowledge of PPPs continues to expand and it is well-documented in existing literature (Wang et al., 2018) that the concept of PPPs is a potential solution to logistics infrastructure challenges (Lee et al., 2022).

Furthermore, PPPs have the potential to attract investment and expertise from both public and private sectors to support infrastructure development projects (Zhang & Leiringer, 2023). Additionally, the purpose of PPPs is to address infrastructure project related issues such as “design, construction, financing, operating, and maintenance” (Casady, 2021, p. 2). Therefore, PPP models can be used as a mechanism to address the export flows challenge experienced due to the lack of quality infrastructure (Vogel et al., 2022). Moreover, infrastructure development projects are prone to governance issues due to a lack of transparency and corruption (Casady et al., 2020). This has led governments to explore PPPs to mitigate against the risk of weak governance structures.

Governments need to institutionalise the approach of PPP models to provide an enabling environment that will foster the cost effectiveness and efficiencies of value chains through the development of logistics infrastructure (Tan & Zhao, 2021). The institutionalisation of PPPs comes with some benefits for countries with emerging economies as it creates an opportunity to enhance current regulatory frameworks for the PPP in the investment environment (Casady, 2021). Therefore, it is crucial for countries such as South Africa to advance in the implementation of PPPs for logistics infrastructure development. In addition, this is supported by the Department of Transport (2023) emphasising the need to invest in rail infrastructure development through PPPs to foster economic growth and job creation in South Africa.

The existence of a relationship between PPPs and improved logistics infrastructure is evident and embraced by China since the early 2000's (Zhang & Leiringer, 2023). Moreover, other countries such as the UK, Spain, Portugal and Australia experienced significant improvements in logistics infrastructure following the successful implementation of PPPs (Wang et al., 2018). However, over the past two decades there has been a lack of PPP project development in the Sub-Saharan Africa (SSA) region (Osei-Kyei & Chan, 2016).

Therefore, further research needs to be conducted to explore the best practices implemented by other countries and apply them in the South African context (Osei-Kyei & Chan, 2016). The framework of institutional logics was applied in PPP studies to address tension and foster collaboration between the public and private sectors (Vogel et al., 2022). Moreover, PPPs are grounded by certain principles that

encourage shared responsibility and mutual benefit for both the public sector and private sector (Alemile et al. 2024).

In South Africa, PPPs have been implemented in various sectors such as logistics, healthcare, renewable energy and urban infrastructure (Memari et al., 2025). However, the success of these infrastructure projects have been influenced by the quality of institutional frameworks and the capability of the public sector and the private sector (Alemeile et al., 2024)

### **2.2.1 Forms of Public-Private Partnerships**

Public-Private Partnerships have various forms, with each defined by a commercial structure including service contracts, concession contracts, supply-side state support, and demand-side state support (George et al., 2024). Similarly, Casady et al. (2020) emphasise the existence of multiple forms of PPPs by introducing alternative models such as “Design-Build-Operate and Maintain, Design-Build-Finance-Operate-Maintain, and Concession or Long-Term Lease” (p. 6). Moreover, each form determines the roles and responsibilities of both the public and private sectors and including their respective contributions to the partnership (George et al., 2024). Therefore, PPP structures provide clarity on the involvement of each party to ensure that projects yield successful outcomes.

In developing countries, PPPs are considered to be project-focused rather than being a norm and in many instances these projects are in the transportation industry and the construction industry (Almeile et al. 2024). Furthermore, in a South African context, PPPs are popular in road tolling projects, airport terminals, and port terminals that attract private investment through long term concessions (Memari et al., 2025).

Poor logistics infrastructure creates economic and social challenges for developing countries hence the need for collaboration between the public and private sector to address these challenges (George et al., 2024). Therefore, the public sector through SOEs adopts specific forms of PPPs such concession contracts, service and leasing contracts to leverage the capabilities of the private sector to address logistics infrastructure challenges (George et al., 2024). In a South African context, “concessions, leases, and joint ventures” are the forms of PPPs that are preferred by the government to attract private investment (Department of Transport, 2023, p.

12). This provides flexibility to select from a list of various forms of PPPs to ensure that the interests of all stakeholders are considered.

Additionally, an alternative structure within PPPs is the formation of a Special Purpose Vehicle (SPV) serving as a dedicated entity created through the collaboration of multiple stakeholders (Burke & Demirag, 2019). Despite having varying interests and objectives individually, this structure allows for the public and private sectors to manage and share the risks towards a common goal. Furthermore, combining resources and expertise from both sectors can enhance the capability to implement rail infrastructure projects successfully to achieve sustainability. In addition, dealing with such complexities requires PPPs to adopt an organisational structured approach (George et al., 2024).

Overall, PPPs come in various forms and this diversity enables the public sector to tailor the partnerships to be fit for purpose (Almeile et al., 2024). However, these forms of PPPs require proper policy design and oversight to ensure that there is accountability and equitable distribution of value. Furthermore, for PPPs to be successful in South Africa, transparent procurement processes, key performance indicators, and flexible contracting mechanisms that can adapt to economic, social, and political changes (Whiteside, 2020).

### **2.2.2 Public-Private Partnership Challenges**

The inception of Public-Private Partnerships comes with several challenges (George et al., 2024). Firstly, understanding the value proposition of PPPs due to a lack of information and interaction complexities. Secondly, communicating to multiple stakeholders and coordinating project actions can be challenging due to diverse or conflicting interests. Thirdly, due to the conflicting interests, trust issues emerge during the collaboration because of a lack of transparency and sacrifices to forgo immediate gratification for long-term success. Lastly, governance issues arise due to a lack of institutional structures, policies, and procedures.

In addition to the challenges already highlighted by George et al (2024), Burke and Demirag (2019) identified two additional challenges that should be considered. Firstly, the management of risks associated with PPPs that should be closely monitored, and mitigation measures should be put in place to foster a sustainable collaboration. Secondly, the risk of uncertainty that stems from unknown variables

that can negatively influence the success of PPPs. Moreover, the uncertainty can be influenced by external factors such as economic and political risks that lead to changes in the regulatory framework and policies (Casady, 2021).

Additionally, the PPP challenges experienced by in a developing country are different compared to those experienced by developed countries (Almeile et al., 2024). The difference stems from the public sectors access to resources such as funding and technical expertise that can be at different levels of availability.

### **2.2.3 Public-Private Partnership Adoption**

Despite the increasing demand for PPPs, the adoption rate can be relatively low and result in a negative impact on the expected investments for both developed and developing countries (Tan & Zhao, 2021). Additionally, the different views and preferences globally on the adoption of PPPs are critical due to the impact of policy and regulation framework changes (Casady, 2021). However, good governance is critical for the adoption of PPPs as it contributes to attracting private sector investors to help finance infrastructure development projects to boost economic growth in developing countries (Tan & Zhao, 2021). Therefore, the adoption relies heavily on the establishment of institutional frameworks that will create confidence in potential investors to support PPPs for the development of infrastructure in developing countries.

Transnet, an SOE which is the sole provider of rail transport services in South Africa has effected changes to the Network Statement and subsequently impacted the regulatory frameworks (Transnet, 2024). Additionally, the development of the Roadmap by the Department of Transport (2023) promotes policy and legislation changes to combat the South African logistics system crisis. Furthermore, these changes through structural reforms will create an environment in which the private sector can participate in a competitive but regulated environment (Department of Transport, 2023).

### **2.2.4 Public-Private Partnership Funding**

Over the years, the funding of infrastructure development has been the responsibility of the government through SOEs (Zou et al., 2022), and debt financing through development banks (Casady, 2021). However, the introduction of PPPs has subsequently changed this due to the need for the private sector to participate

financially and fund the infrastructure development projects (Tan & Zhao, 2021). Therefore, PPP infrastructure projects are no longer funded by the public sector only but the private sector plays a crucial role by contributing financially (Burke & Demirag, 2019). Moreover, the private sector provides expertise in managing funds to avoid risks related to the mismanagement of funds by the government.

Similar to the global trend in which the government provides funding for infrastructure development (Zou et al., 2022), the South African government through its SOE Transnet provides funding for the development and maintenance of rail infrastructure (Department of Transport, 2023). Additionally, the National Treasury of South Africa has budgeted more than one trillion rand towards infrastructure development over a period of three years starting in 2025 indicating its commitment to enhancing the infrastructure integrity (Godongwana, 2025). However, the SOE has been experiencing financial difficulty. Therefore, the government can no longer fund infrastructure project alone and is in need for private sector funding. Furthermore, the South African National Treasury continues to create an enabling environment for the participation of the private sector in the development of infrastructure by implementing structural reforms (Godongwana, 2025).

### **2.3 Conclusion**

In the above section, the analysis and review of literature and industry publications from the existing body of knowledge covering the specific concepts explaining the technical details of the research topic. Furthermore, the following section is the research questions that will define the questions to be answered by the “data collected specifically for the research being undertaken” (Saunders & Lewis, 2018, p. 85).

### 3. Research questions

Several insights have emerged from the literature review section which elaborates on the variables that influence the relationship between the research constructs. These relationships build on the research approach towards achieving the research objective to understand the roles of stakeholders, and how the different infrastructure development project variables can be applied to PPP models. Therefore, this section seeks to explore the phenomena and the above mentioned relationship through in-depth interviews.

The research intends to provide clarity on the role of Public-Private Partnerships and an understanding of how it can contribute to improving the development of logistics infrastructure and increase import and export volumes. The research questions are as follows:

**Research Question 1:** How do Public-Private Partnerships improve the development of infrastructure?

**Research Question 2:** What is the role of the public sector?

**Research Question 3:** What is the role of the private sector?

The above section covered the research questions, which are aligned to the research topic. The following section is the methodology and design for this research and will provide the direction on the approach this research will follow.

## **4. Research Methodology and Design**

This chapter is the research methodology and design section which seeks to provide a guideline for how the answers to the questions mentioned in chapter 3 are obtained. The nature of the study is qualitative and follows an explorative research design, which allows for in-depth interviews to be conducted to gather insights that can enhance the understanding of the research topic.

### **4.1 Research Design**

#### **4.1.1 Purpose of research design – Explorative**

Research design is an important part of conducting research as it examines your thought process and the credibility of your study (Saunders & Lewis, 2018). Therefore, this research follows an explorative design as it seeks to gain insights and an understanding of how PPPs can improve the development of logistics infrastructure and the roles of the public sector and the private sector (Zhang & Leiringer, 2023). In addition, this research is a qualitative study, which seeks to explore insights emerging from the real world through human experiences and perspectives (Lim, 2024). This approach is aligned with the purpose of this study to understand the successes and challenges of PPPs, and how these models can help bridge the gap in infrastructure development.

#### **4.1.2 Philosophy – Interpretivism**

Research philosophy is a set of “beliefs and assumptions about” how knowledge in a particular field is developed and understood (Saunders & Lewis, 2018, p. 106). Additionally, these assumptions influence the approach to conducting research. The nature of qualitative research is interpretive as it focuses on the narrative aspects of personal experience (Lim, 2024).

Therefore, the selected research philosophy for this study is interpretivism. Moreover, this approach offers contextual insights and interpretations of experiences that influence the research (Lim, 2024). Interpretivism is aligned with this study as it clarifies the requirements to develop logistics infrastructure using PPPs and the roles for the public and private sectors.

#### **4.1.3 Approach selected – Inductive**

The inductive research approach is a process of “building of theory” by conducting an analysis of data that already exists (Saunders & Lewis, 2018, p. 113). Additionally, inductive reasoning moves from observing specific patterns and repetitive occurrences to a broader generalisation of theories (Saunders & Lewis, 2018). Therefore, this research follows an inductive research approach. Despite the shortcomings of inductive reasoning which is to downplay existing literature and theoretical frameworks; several strategies may be implemented by the researcher to articulate a clear and transparent research process to mitigate against the shortcomings (Lim, 2024).

Furthermore, the inductive approach allows for emerging theories to explain the phenomena in a manner that is connected to empirical data (Lim, 2024). Therefore, the research aims to uncover novel insights in areas where existing theories are insufficient or non-existent (Lim, 2024). Additionally, the approach allows for rigorous data analysis to enhance the credibility of the research findings.

#### **4.1.4 Methodological choices – Mono**

Mono method uses a single data collection technique (Saunders & Lewis, 2018, p. 127). Therefore, this research follows a “mono method qualitative” study in which the data collection is based on in-depth interviews (Saunders & Lewis, 2018, p. 127). Qualitative research uses methods such as in-depth interviews to gather comprehensive and in-depth insights (Lim, 2024). For this reason, the mono methodological choice is justified.

#### **4.1.5 Strategy – Phenomenology**

Phenomenology strategy is the investigation in which “the researcher describes the lived experiences of individuals about a phenomenon as described by the participants” (Creswell & Creswell, 2022, p. 46). Therefore, this research uses a phenomenology strategy (Alhazmi & Kaufmann, 2022). The chosen strategy conducts an intensive examination of personal lived individual experiences, processes and activity to reveal the dynamics and complexity of the real-world situation (Lim, 2024).

Furthermore, the phenomenology strategy aligns with the purpose of the research as it allows for observational and exploratory analysis to get an in-depth contextual

understanding of the emerging themes (Lim, 2024). Additionally, the strategy approach focuses on rail transport in the mining sector to understand the impact of the current condition of rail infrastructure to the sector and how PPPs can yield a positive turnaround outcome.

#### **4.1.6 Time horizon – Cross-sectional**

Considering the time constraint to complete this research, a cross-sectional time horizon is used to provide a “snapshot” of the current situation of logistics infrastructure in South Africa and how PPPs can influence future rail infrastructure projects to service the mining industry (Saunders & Lewis, 2018, p. 130). Therefore, with this approach, data is “collected from multiple types of people” working in rail transport in mining (Saunders & Lewis, 2018, p. 130).

#### **4.2 Population**

In research, the population is the total “set of group” of “members” such as a group of individuals, organisations, and places (Saunders & Lewis, 2018, p. 138). Furthermore, for qualitative research the population provides the researcher with in-depth insights to gain a comprehensive understanding of a particular topic in the context of the real world to enable informed and tailored interventions (Lim, 2024). Therefore, the population for this research is individuals working in various industries using rail transport for moving products, specifically in the mining logistics industry for bulk minerals as well as other stakeholders in the rail transportation industry.

Furthermore, the population comprises individuals from the public and private sectors that are in middle and top management roles with at least two years’ experience in rail transport in mining. The individuals are based in South Africa as the research seeks to gain insights from a South African context adding the current body of knowledge that focuses on a global context.

#### **4.3 Unit of analysis**

The unit of analysis for this research is individuals working in the mining logistics industry transporting bulk minerals by rail transport, and other stakeholders involved in the rail transport industry. Furthermore, these individuals are people in middle and top management roles and are knowledgeable about rail logistics and partnerships. Additionally, considering the insights highlighted in the literature review about

funding, investment, and regulatory changes, it is crucial that finance and legal experts are included in the unit of analysis.

#### **4.4 Sampling method and size**

Sampling is the “complete list of members” that are a part of a specific “population” in which a sample will be selected (Saunders & Lewis, 2018, p. 139). This qualitative research study uses a “non-probability” purposive “sampling technique” (Saunders & Lewis, 2018, p. 141). Therefore, the technique allows the researcher to choose the best candidates to “answer the research questions” to achieve the research objectives (Saunders & Lewis, 2018, p. 145).

For this study, 12 to 15 in-depth interviews or until saturation is reached with bulk mining commodity logistics industry experts and other stakeholders from both public and private sectors specialising in rail transportation of products. With this sample, the research seeks to understand the role of PPPs in the development of logistics infrastructure (Saunders & Lewis, 2018). The sample selection consists of the researcher’s professional and personal networks, and other referrals.

It is important to interview the entire sample as it removes bias that is avoided with smaller groups. Therefore, this strengthens the reliability and transparency of the data collected.

#### **4.5 Measurement Instrument**

The nature of the research is exploratory; therefore, an interview guide is used as a measurement instrument (Saunders & Lewis, 2018). Therefore, an interview guide is developed by listing all the topics that will be discussed and questions related to each topic.

Additionally, the questions in the semi-structured interviews are open-ended, allowing participants to openly express themselves and provide insights that may not have been considered in the questionnaire (Lim, 2024).

#### **4.6 Data gathering process**

Primary data is collected by conducting “in-depth interviews” to answer the research questions (Saunders & Lewis, 2018, p. 127). These semi-structured interviews are conducted on Microsoft Teams, in person, or other format that is acceptable with

relevant industry experts to provide in-depth insights from different human experiences and perspectives (Lim, 2024).

Furthermore, the interviews should last about 45 minutes and are recorded and transcribed with the participants' permission. A data collection consent form is sent to each of the participants expressing the terms of dialogue and emphasising the confidentiality of the information that they will be sharing.

Additionally, the number of interviews that are conducted is aligned with the sample size of 12-15. However, interviews are conducted until saturation is reached. However, if new insights emerge following the conclusion of the interviews additional public non-human data may be sourced from databases such as logistics and mining industry bodies, and SOE websites. The data gathered from the interviews is stored safely in a cloud storage to ensure that it is kept for a period of 10 years.

#### **4.7 Data Analysis approach**

The transcripts from the recorded interviews are analysed as text data. This data is analysed using two different techniques to ensure the credibility and integrity “of the data” is maintained (Saunders & Lewis, 2018).

Firstly, ATLAS.ti a “computer-aided qualitative data analysis software (CAQDAS)” is used to conduct a thematic analysis to identify emerging themes (Saunders & Lewis, 2018, p. 202). Secondly, data is analysed manually to identify patterns in the data and develop codes that will be grouped into themes (Perannagari & Chakrabarti, 2020).

Moreover, the following thematic analysis steps are used to analyse the data (Shukla et al., 2019). Step 1. Get familiar “with the data” collected, “Step 2. Generate initial codes, Step 3.” Identify “themes, Step 4. Review” the identified “themes, Step 5. Define and name the themes”, and “Step 6. Produce a report” (Shukla et al., 2019, p. 351-352).

The “thematic analysis” is conducted iteratively; therefore, the summary of the results is categorised under various themes (Shukla et al., 2019, p. 352).

#### **4.8 Research ethics**

Commencing with the data collection process of the research project, the researcher seeks to obtain ethical clearance from the Ethics Committee of the Gordon Institute of Business Science (GIBS). All the participants on this research project are requested to complete and sign a consent form following the explanation and assurance that their information and responses are kept confidential and anonymous.

#### **4.9 Quality controls**

Quality controls are measures that are developed to assess the quality of data collected from the qualitative research (Saunders & Lewis, 2018). An inductive approach is used to search for patterns to test the research proposition and identify alternative explanations to develop a clearly justified and credible conclusion the data collected (Saunders & Lewis, 2018).

To do this, the following steps are taken (Saunders & Lewis, 2018, p. 213): 1. “Develop meaningful codes that describe the data”, 2. “Decide on the appropriate unit of data for the analysis”, and 3. “Attach the relevant codes to the unit of data”.

In addition to the above steps, the following process is conducted to ensure the quality of data collected (Saunders & Lewis, 2018): 1. Clearly explain “the method used to collect data”, 2. Clearly explain “the method used to analyse data”, 3. Explain the findings thematically, 4. Ensure that findings are related to the research objectives and propositions, and 5. Ensure that “the arguments and evidence presented support the claims made” in relation to the context of the research (Saunders & Lewis, 2018, p. 210).

Furthermore, to test the integrity of the insights gained from the interviews, the interviewee provides a background about themselves as part of the introductions. This is to ensure that the interviewee provides useful information that is relevant and contributes to the purpose of the research.

#### **4.10 Limitations**

Several anticipated limitations have been acknowledged in conducting this research study. Due to time constraints, the data collection method that used is a “mono-method” (Saunders & Lewis, 2018, p. 127). Therefore, the inherent weaknesses of this approach may not be addressed.

Additionally, the in-depth interviews that are conducted may highlight bias responses due to the nature of the selected strategy for this study in which insights are shared based on human experience and perceptions. Another limitation is the lack of interview and research skills of the author, and the availability of interviewees.

## 5. Findings

### 5.1 Introduction

This chapter presents the key findings following the analysis of the qualitative data collected through semi-structured interviews. Although the plan was to conduct 12 to 15 interviews, a request was sent to 25 potential participants taking into consideration that some may decline or may not be available. Consequently, the responses were mostly positive and semi-structured interviews were conducted with 19 individuals actively involved in the mining logistics and infrastructure industry, transporting minerals by rail and other industry experts involved in the rail transport industry in South Africa. However, one participant requested to invite a colleague who has extensive insights and knowledge on this topic and have a joint interview which resulted in 18 interview transcripts. The primary objective of this research is to investigate and get a better understanding of the role, impact, and dynamics of Public-Private Partnerships (PPPs) in the development of South Africa's logistics infrastructure, with a specific emphasis on the rail sector. This chapter is dedicated to systematically analysing the narrative in the data obtained from these interviews to address the research questions as outlined in the interview guide:

1. How do Public-Private Partnerships improve the development of infrastructure?
2. What is the role of the public sector?
3. What is the role of the private sector?

The data analysis will highlight the participants' diverse and expert perspectives on the definition of, and PPPs as a concept, the critical components required for their success, the distinct yet interdependent roles of the public and private sectors, and the significant challenges and potential mitigation strategies associated with implementing PPPs in the South African context. Furthermore, the findings are structured thematically, which fosters alignment with the research questions to ensure cohesion and, a logical and accessible presentation. Additionally, to ensure that the findings are anchored in the lived experiences and opinions of the participants, direct quotations extracted from the interview transcripts are used throughout the chapter. However, this approach does not only validate the analytical claims but also provides an authentic voice to the participants' perspectives.

Therefore, this chapter seeks to lay the empirical foundation for chapter 6 which will present the subsequent discussion, conclusions, and recommendations.

## **5.2 Qualitative Data Analysis Approach**

To analyse the insightful data gathered from the 18 semi-structured interviews, a systematic qualitative data analysis approach was used. The chosen methodology was a thematic analysis which is widely used and is a flexible method for identifying, analysing, and reporting patterns and themes within qualitative data. This approach is particularly well-suited for this study because it allows for a detailed and nuanced exploration of the participants' experiences, opinions, and perceptions regarding PPPs in the logistics sector. The process was iterative and rigorous, following several distinct phases to ensure that the findings are credible, trustworthy, and insightful.

The structure of the interview guide itself provided a deductive framework for the initial stages of analysis. With sections dedicated to each of the three research questions, the guide offered a pre-defined structure that facilitated the initial organisation and coding of the data according to these primary areas of interest.

The steps below were followed during analysis process:

The first step was to familiarise myself with the data, which involved reflecting on the interviews and immersing myself in the data. All 18 interview transcripts were read and re-read multiple times to develop a holistic understanding of the content and context of the participants' responses. This phase included making initial notes and identifying preliminary ideas and patterns.

The second step was the initial coding step which followed the familiarisation step, a comprehensive coding process was conducted breaking down the content step by step which involved assigning descriptive labels or "codes" to segments of text that captured a specific concept or piece of information. For example, one of the participant's commented about the public sectors inability to fund large-scale projects was coded as "*Public Sector Capital Constraint*". This granular process was applied across the entire dataset, resulting in a large and detailed inventory of initial codes.

The third step was searching for themes, which involved grouping the initial codes into potential overarching themes. The codes that shared a similar underlying concept or that were closely related were grouped together. For example, codes such

as "*Private Sector Capital*", "*Access to Investor Funds*", and "*Government Budgetary Shortfalls*" were grouped under a broader potential theme related to the financial dynamics of PPPs.

The fourth step was reviewing the themes, following the establishment of potential themes, a two-level review process was followed. Firstly, the grouped data extracts for each theme were reviewed to ensure they formed a coherent and consistent pattern. Secondly, the entire thematic map was evaluated against the complete dataset to confirm that it accurately and comprehensively represented the narratives of the interviews. During this phase, some themes were merged, others were broken down into more specific sub-themes, and some were discarded due to a lack of sufficient supporting data.

The fifth step was to define and name themes in which after the review and refinement process, each theme was clearly defined and given a concise, analytical name. This involved writing a detailed narrative for each theme, articulating its scope, boundaries, and significance in relation to the overarching research questions. The final themes and sub-themes that emerged from this process form the structure of the findings presented in this chapter.

The sixth step was writing the report, the production of this chapter. The analysis is presented as a coherent narrative, interwoven with illustrative and verbatim quotations from the participants. The extensive use of direct quotes is a deliberate choice to ensure that the findings remain firmly grounded in the participants' own words, thereby enhancing the authenticity, validity, and richness of the analysis.

This systematic and multi-phased approach ensured that the analysis transcended a mere summary of the data, instead offering an interpretive and in-depth exploration of the key patterns of meaning relevant to understanding the complex role of PPPs in South Africa's logistics infrastructure landscape.

### **5.3 Sample Description**

A total of eighteen individuals from both the public and private sectors participated in this study. To provide a clear context for the findings presented in this chapter, this section offers a consolidated overview of the participants' professional backgrounds. Of the 19 participants, a significant majority 14 are from the private sector, while five

are from the public sector. This distribution provides a predominantly private-sector-oriented perspective on the dynamics of engaging with public entities for infrastructure development.

The participants possess a wealth of experience across a wide range of fields that are directly and indirectly connected to logistics and infrastructure, including mining, finance, law, engineering, strategic consulting, and commercial operations. Their collective expertise, spanning from a few years to over three decades, provides a multifaceted, deeply informed, and authoritative view of the research topic. Table 1 below summarises the demographical information for each participant, with names anonymised for confidentiality.

Table 1: Research Interview Participants

Participant Code	Sector	Industry and Profession	Years Experience	Gender
001	Private	Mining - Logistics	> 15 years	Male
002	Private	Mining - Logistics	> 17 Years	Female
003	Private	Mining - Logistics	> 15 years	Male
004	Private	Mining - Logistics	> 2 Years	Male
005	Public	Transportation - Commercial	> 18 Years	Female
006	Private	Mining - Logistics	> 3 Years	Male
007	Private	Mining - Legal	> 15 years	Female
008	Private	Legal - Corporate and Commercial Law	> 5 Years	Female

009	Private	Transportation - Operations	> 40 Years	Male
010	Public	Transportation - Strategy	> 23 Years	Male
011	Private	Transportation - Operations	> 12 Years	Male
012	Private	Finance - Transaction Advisor	> 20 Years	Female
013	Private	Transportation - Business Development	> 20 Years	Male
014	Private	National Logistics Crisis Committee	> 35 Years	Male
015	Public	Transportation - Commercial Strategy	> 15 years	Male
016 A	Private	Construction - Project Management	> 10 Years	Male
016 B	Private	Construction - Project Management	> 10 Years	Male
017	Public	Transportation - Business Development	> 10 Years	Male
018	Public	Transportation - Commercial	> 15 years	Female

This diverse blend of expertise strengthens that data sources for this study, providing a wealth of knowledge, particularly anchored from industries like mining and transportation that are heavily reliant on South Africa's logistics infrastructure. The significant representation from the private sector highlights the importance of getting an open and critical view of the motivations, expectations, and frustrations experienced when engaging with public sector entities on major infrastructure projects.

## 5.4 Presentation and Analysis of Themes

This section highlights the findings derived from the thematic analysis of the 18 interview transcripts. The data has been systematically organized into five overarching themes that align to the research questions guiding this study. Furthermore, each of the major themes are broken down into several sub-themes to provide a detailed, granular, and nuanced understanding of the participants' collective and individual perspectives. This structure facilitates a clear and logical progression through the data, from broad conceptualisations of PPPs to specific roles for each sector and operational challenges experienced during implementation.

### 5.4.1 Themes: Research Question 1

#### Theme 1: Defining and Conceptualizing Public-Private Partnerships

The first major theme that emerged from the data was the fundamental understanding and definition of PPPs in the context of logistics infrastructure. Although the term is commonly used, the participants provided different definitions that revealed a shared understanding of PPPs. It is not only seen as a type of contract but as a necessary and strategic tool used to address complex social problems due to systemic failures within the public sector. This theme is explored through two primary sub-themes: the core definition of PPPs as a model that fosters collaboration and synergies between the private and public sectors to work together in creating new infrastructure or improve existing infrastructure. This may be overwhelmingly considering the public sector shortcomings.

#### Sub-theme 1.1: The Core Definition - A Collaborative and Synergistic Model

A consistent definition of PPPs emerged across the 18 interviews, defined as a form of a structured collaboration between organisations from the public and private sector. The language used by participants was consistent and included concepts of partnership, shared goals, and the leveraging of complementary strengths. Participant 001 defined it as a "*structured collaboration between the infrastructure owner as the custodian of the assets itself and the private operators or private entities that utilises this infrastructure*". This was echoed by Participant 006, who provided a concise definition: "*It's a partnership between government and private business to enhance the service delivery of logistics to the benefit of all stakeholders*". Similarly,

Participant 010 described it as a *"formal agreement where you find it exists between a public sector and private organisations"*.

This type of collaboration was frequently framed as a synergistic process where the unique attributes and capabilities of each sector are combined to produce a superior outcome. Participant 003 articulated this as an effort to *"pull resources from the public sector and the private sector to gain an improved service offering"*, effectively *"leveraging the best of both worlds to deliver the best solution possible"*. Participant 004 used similar language, describing a PPP as a situation *"where the public sector and the private sector join hands to address challenges so that there is a joint reward and it becomes a win-win case for both parties"*. This idea of leveraging strengths was also highlighted by Participant 008, who stated that in a proper partnership, the parties *"play on their strengths"* to create a *"win-win situation for the customers"*.

Participant 007 expanded on the operational nature of this partnership, explaining that it is where *"the private sector and government sector collectively operate to improve efficiencies in that space"*. This collective operation can manifest in various forms, from the private sector simply providing a service to taking on a more integrated role in financing, building, operating, and managing parts of the infrastructure itself. Participant 016 B provided a brief description of the arrangement stating that *"a public sector entity seeks the assistance of the private sector, particularly from a funding and execution perspective"* and *"makes an asset available for development"* with the expectation of receiving it back with improvements after a set period.

The consistent and widespread emphasis on *"partnership," "collaboration," "joining hands"*, and *"leveraging strengths"* across the data set indicates that participants view PPPs as a model that is fundamentally more integrated and interdependent than the traditional sourcing and contracting models. It is perceived as a strategic alliance where both sectors are expected to contribute actively and work together towards a common with mutually beneficial objective.

#### Sub-theme 1.2: The Rationale - A Necessary Response to Public Sector Shortcomings

Beneath the functional definition of collaboration, a deeper and more urgent rationale for the existence and necessity of PPPs emerged as a dominant and powerful sub-

theme. Participants from both the public and private sectors framed PPPs as a direct and essential response to the perceived failures, constraints, and inefficiencies of the public sector, particularly state-owned enterprises (SOEs) like Transnet.

The most frequently cited public sector failure was the lack of funding for infrastructure maintenance, rehabilitation, and new development. Participant 004 stated plainly that *"the main reason why government is driving it, because there is a lack of resources specifically from a funding perspective"*. Participant 010, a public sector employee, confirmed this, noting that in the South African context, *"the South African government doesn't have sufficient funds to really fund the required infrastructure"*. Participant 007 provided a plain assessment of the situation by explaining that SOEs have been *"ravaged by state capture, they don't have the ability to raise funds themselves, and they have an ageing infrastructure"*. They concluded by stating that *"for these entities, entering into PPP is a matter of survival, as the private sector is the only space where they are going to be able to raise funding"*. This view was shared by Participant 016 B, who noted that *"the public sector enters into PPPs because they do not have the finances to do it internally"*.

Beyond funding, it is perceived that lack of skills, capacity, and operational efficiency within the public sector was identified as another major driver. Participant 006 pointed out that infrastructure delivery is hampered by *"a lack of funding, a lack of expertise, a lack of credible supply chain practises"*. However, Participant 008 contrasted the two sectors, explaining that in the public sector, customers find *"poor service delivery and or there is a lot of red tape when it comes to contract management and decisions are not made quick enough"*, whereas the private sector is *"actually quite good and actually looking at efficiencies"* due to its inherent profit motives and accountability structures. Participant 015, another public sector participant, acknowledged the potential for the private sector to bring *"greater efficiencies"*, *"manage risk a bit better"*, and be *"more responsive"*.

Furthermore, this perspective was articulated bluntly by Participant 009, a veteran of the old railway system, who sees PPPs as *"a conduit to what the public sector cannot do"*. Additionally, this failure is attributed to a poor work ethic within the SOE, stating that *"employees lack skin in the game"* because *"they get paid their monthly salary whether trains are supplied to customers or not there is absolutely of no"*

*consequence*". He concluded that private participation is a "*necessary evil*" required to instil business principles and accountability.

In this context, the conceptualization of PPPs goes beyond a simple business model. It is viewed by the majority of participants as a critical, almost unavoidable, intervention to rescue, restore, and advance failing logistics infrastructure. The private sector is thus positioned not just as a partner, but as a necessary force required to raise funding, provide specialised expertise, and create a culture of efficiency and accountability that is perceived to be non-existent in the public sector.

## Theme 2: Key Components, Role, and Opportunities of PPPs

Flowing logically from the definition and rationale of PPPs, the analysis identified a rich and detailed theme focused on what is practical and realistic to make these partnerships successful, the specific role they play in the development of logistics infrastructure, and the future opportunities they present for the country. Participants detailed a clear set of foundational elements required for success and articulated a compelling vision of how effective PPPs can transform the logistics landscape and, the country's economy.

### Sub-theme 2.1: Foundational Elements for Success

Across the interviews, participants identified several critical components that are universally considered essential for a PPP to succeed. The most frequently mentioned and foundational element was the need for clear alignment and a common goal. Participant 004 emphasized that success "*starts with openness and intent to participate for the right reasons and alignment on what is it that we are trying to achieve and how we are going to achieve it*". This was supported by Participant 005 from the public sector who stated, "*it would certainly be to have a common goal*". She further states that "*all stakeholders or participants in this PPP arrangement need to agree that the overall goals are to increase system throughput and everybody needs to be driving towards the same thing*". Participant 018 reinforced this, stating, "*there needs to be a common goal that exists amongst the two*", referring to both sectors.

Furthermore, working together with a common goal is the necessity for well-defined roles, responsibilities, and risk allocation. Participant 007 argued that the first key

component is *"just clarity on what the roles and responsibilities of each party are"*. Participant 005 supports this by highlighting the importance of *"upfront clarifying what each party's role will be and what contribution they will have to make in the space"*. Moreover, Participant 013 added that *"a successful PPP like the Gautrain involves an appropriate transfer of risks between the various parties"*.

A strong governance structure and transparency were also deemed vital for building trust and ensuring accountability. Participant 007 highlighted the need for *"a good governance structure"* and an *"overarching governance accountability structure"*. Participant 006 highlighted that *"governance structure is what actually supports"* the partnership as a key component to *"make sure that there is full transparency"*. Furthermore, Participant 001 shared the same view who highlighted that *"transparency in how funds are utilised is a critical requirement for attracting investors"*, and Participant 015, emphasised that transparency is important in a context where there have been issues of *"misconduct in procurement events"*.

In conclusion, the private sectors perspective is that for a PPP to be viable, it must have a financial model that will ensure a return on investment and benefit all stakeholders in the partnership. Participant 006 explained, *"you obviously want to enter into this partnership with the goal of earning a return"*. Therefore, the financial return for the investors or the value that is unlocked for stakeholders will be important. Participant 003 summarized this commercial reality briefly stating that *"success has to be where both parties feel like they are winning. It cannot be one party winning and the other party subsidising the other"*. This includes ensuring the project is *"bankable"* with a structure that allows lenders and shareholders to be repaid and earn an appropriate return. The duration of the agreement is also key, with Participants suggesting a long-term relationship of *"25 years or more"* is necessary to recoup significant upfront investments.

#### Sub-theme 2.2: The Role of PPPs in Infrastructure Development

Participants described the functional role of PPPs in development in several distinct but interconnected ways. Primarily, they are seen as a powerful tool to unlock capacity and restore deteriorating infrastructure. Participant 001 stated that PPPs are *"one of the tools that can be utilised to unlock capacity"* on the rail network, which is *"very constrained at this current state of affairs"*. Participant 004 indicated that from a South African rail context, considering the condition of the existing rail network, the

focus of PPPs should be *"more on the restoration of the rail network than building a new one"* because the network *"has deteriorated"* due to underinvestment. Participant 013 reinforced this, highlighting the need for a *"rehabilitate, operate, and transfer model"* for the *"brownfields projects"*.

Another fundamental role of PPPs is to improve efficiency and cost-effectiveness, primarily by injecting private sector competencies and a commercial mindset. Participant 003 noted, *"if they're done properly, you will get an absolute efficiency gain because state companies are typically not run like private companies. Private companies are driven essentially through bottom line demands"*. Participant 001 explained the direct link between efficiency gains and cost reduction, stating that *"improved turnaround times and increased volumes"* result in efficiency gains and *"economies of scale"* result in cost reduction. This efficiency is driven by bringing in private sector experience, competency, capacity, and better procurement or supply chain practises.

Several participants provided concrete examples of successful PPPs to illustrate their impact and the important role they play in developing logistics infrastructure. Although the Maputo Port is an international example, it was frequently cited as a prime example of a successful logistics PPP, where private involvement led to substantial expansion and efficiency gains that benefited the entire export corridor for the South African mining industry. The Gautrain was another commonly mentioned success story, lauded for its efficiency and as a *"world class transport system,"* demonstrating a successful collaboration on a new build project also termed *"greenfield"*. Other examples included various toll roads like the N3, which were seen as critical for enabling road freight when rail failed, and the Richards Bay Coal Terminal (RBCT), which was described as a *"benchmark"* for operational and project execution excellence.

### Sub-theme 2.3: Future Opportunities and Economic Impact

Looking forward, participants saw immense opportunities for PPPs to serve as a catalyst for not just infrastructure renewal but for broader national economic growth and development. The powerful analogy of logistics infrastructure as the circulatory system of the economy was used by Participant 003 stating *"your logistics infrastructure, your roads, your rail, they are essentially the veins of your economy"*

*and the commodities that flow on them is the blood flow. Therefore, if you have a constrained logistics system, you stagnate growth".*

Therefore, PPPs are seen as a fundamental driver of national economic upliftment. Participant 004 explained that improving freight volumes leads to *"an improvement in trade volumes and general economic upliftment, which is what the public sector is chasing"*. He elaborated in his closing comments, describing PPPs as a mechanism to *"stimulate economic activity for the benefit of South Africans"* by *"driving innovation, creating jobs"*. Participant 012 connected a functioning logistics system directly to growth in the mining sector, which in turn has a *"positive impact in terms of economic growth for the country and the fiscus of the country"*. Participant 018 saw *"opportunities for job creation and community development in areas where new logistics capacity could unlock untapped mineral reserves"*.

Beyond individual projects, Participant 006 saw an opportunity to move towards a more strategic, long-term approach to infrastructure development. He argued that a track record of success could be used to *"set up a portfolio of projects that can be delivered through this PPP construct over the next 10 or 15 or 20 years"*, providing certainty and enabling infrastructure development at a national scale.

In essence, the opportunity presented by PPPs extends far beyond the physical act of fixing a railway line or upgrading a port. It is viewed as a foundational strategy for unlocking economic potential, enhancing national competitiveness, boosting the fiscus, and creating a more robust, dynamic, and prosperous economy for the future.

#### **5.4.2 Themes: Research Question 2**

##### Theme 3: The Role of the Public Sector

A crucial and multifaceted theme that emerged from the interviews was the specific role and responsibilities of the public sector within a PPP framework. Despite the motivation for PPPs often stemming from public sector limitations, participants across both sectors articulated a clear, active, and indispensable role for the government and its entities. This role is not one of a passive beneficiary but of an essential initiator, a custodian of national assets, and the ultimate architect of the policy and regulatory environment that enables such partnerships to exist and succeed.

### Sub-theme 3.1: The Public Sector as Initiator, Asset Owner, and Guardian of Public Interest

Participants unanimously agreed that the public sector must take the leading role in initiating PPPs because it is the ultimate owner of the national infrastructure. Therefore, the strategic decision to invite private entities to partner with is the responsibility of the public sector as the initiating party. This was supported by Participant 004 who stated that, "*infrastructure is mostly a public sector domain. therefore, they take the lead and drive the process*". Participant 003 reinforced this, suggesting that the public sector must be "*open to it and if they are not open to the concept of a PPP, you are never going to get any PPP off the ground*". This initiation is the first and most critical step in the entire process.

This role of the Public Sector as the initiator of PPPs is intrinsically linked to its fundamental position as the custodian and owner of national assets. Participant 008 explained, "*the public sector owns the assets, and the assets will always belong to the public sector*". This ownership is a core part of the public sector's contribution to the partnership. Participant 002 noted, "*remember the land and the region belongs to the government, so you still need the input*". The public sector as the asset owner brings the foundational infrastructure such as the railway lines, the port land, the national road corridors to the table, which the private sector then helps to finance, rehabilitate, operate, or expand.

A critical and non-negotiable dimension of this role is the responsibility to safeguard the public interest. While the private sector is driven by commercial objectives and profit, the public sector's mandate is significantly broader, encompassing social and economic development for the entire country. Participant 002 described the public sector's function as providing "*oversight and ensure public interest is maintained in the project*". In addition, Participant 005, from the public sector emphasised the need to protect against a scenario where the private sector might "*maximise their returns and then exit that space without leaving much behind*". Therefore, the public sector must act as a guardian, ensuring that PPPs result in shared benefits and do not lead to the exploitation of national resources at the expense of the broader society. This includes the crucial role of ensuring "*equitable access to these resources to any private participant*", as highlighted by Participant 001.

### Sub-theme 3.2: Architect of the Policy and Regulatory Framework

A central and recurring point across nearly all interviews was that the public sector is solely responsible for creating the enabling environment for PPPs through policy and regulation. This involves setting the rules of the game and providing the legal, institutional, and governance framework in which these complex partnerships can operate predictably and securely. Participant 004 noted that the public sector must "*set the policy framework and the regulations*". Similarly, Participant 007 identified the public sector's primary role as "setting the platform," which begins with a "legislative framework" and a subsequent "regulatory overlay".

This regulatory function is multifaceted and includes the following:

#### *Creating Enabling Legislation*

Participants pointed to several specific policies that have been highly influential. The White Paper on National Rail Policy was frequently identified as the foundational document that initiated the current rail reform process. The Economic Regulation of Transport (ERT) Act was also mentioned as a key piece of legislation intended to liberalize the logistics network and create an independent regulator.

#### *Providing Regulatory Oversight*

Once a PPP is in place, the public sector must ensure compliance and fair play. This involves establishing and managing independent regulatory bodies. Participant 007 highlighted the role of the rail regulator, whose job it is to "*make sure that the access to rail is equitable and fair and objective*". Participant 018 mentioned the Interim Rail Economic Regulator (I-REG) as a body overseeing processes at Transnet's infrastructure manager (TRIM) to ensure compliance.

#### *Managing the Procurement Process*

The public sector is responsible for running the entire procurement and implementation process, from conceptualizing the project and issuing a Request for Proposal (RFP) to evaluating bids and finalizing legally binding agreements. However, participants also frequently pointed to the Public Finance Management Act (PFMA) as a significant and often problematic piece of regulation that creates "*red tape*". Both Participant 007 and Participant 002 identified the PFMA as a critical but

challenging framework that governs public sector contracting. Participant 005, from the public sector, confirmed that "*regulations that fall within the ambit of the PFMA*" are a major influence and that the absence of a specific, simpler framework for PPPs creates a significant gap and difficulty in execution.

### Sub-theme 3.3: Contribution to Planning and Funding

The public sector's role in planning and funding was viewed with considerable complexity and nuance. In terms of planning, it holds the undisputed macro-level responsibility. Participant 006 explained that the public sector has the "*macro planning accountability to say what needs to happen where and by when to make sure that we grow our country*". This involves identifying national infrastructure needs, creating master plans, and flagging specific projects that would be suitable for private sector participation.

However, the public sector's contribution to funding was a controversial topic considering that in previous sections it was established that the primary driver for pursuing PPPs is the lack of public funds for large capital projects. Furthermore, Participant 004 stated clearly that "*in the case of rail reform, the government is pursuing PPPs because they do not have the funding or capital to restore and upgrade the rail networks*".

Therefore, the public sector's financial contribution is typically not in the form of direct capital expenditure on the project itself. Instead, its funding role is seen as facilitating the process and de-risking the investment. This includes, firstly, funding the PPP Process which involves providing the staff and resources required to run the process in a central and separate office such as the Private Sector Participation (PSP) office, and funding the necessary advisory and support services. Secondly, providing guarantees as highlighted by several Participants who suggested that the public sector can contribute significantly by providing government guarantees, leveraging its relationships with Development Finance Institutions (DFIs) like the World Bank or the African Development Bank to make projects more bankable and reduce the risk for private investors. Thirdly, contributing state owned assets which includes the public sector's existing assets such as land and infrastructure as a form of capital contribution to the partnership.

In summary, the public sector's role is not that of a passive partner but of a foundational enabler. It provides the assets, sets the strategic direction, authors the rules, manages the process, and provides the necessary sovereign support to create the very platform upon which private sector capital, expertise, and efficiency can be deployed for the national good.

### 5.4.3 Themes: Research Question 3

#### Theme 4: The Role of the Private Sector

Complementing the foundational role of the public sector, the analysis revealed a clear, consistent, and powerful theme regarding the important contributions of the private sector to PPPs. Across the interviews, participants characterised the private sector as the primary engine of execution by bringing essential resources, a distinct operational ethos, and a commercial discipline that are often perceived as lacking in the public sector. This theme is explored through the private sector's principal role in providing capital and expertise, its function as a driver of efficiency and project execution, and its contribution in the planning and regulatory processes.

#### Sub-theme 4.1: The Engine of PPPs - Providing Capital, Expertise, and Innovation

There was a majority consensus among the participants regarding the role of the private sector which is to provide capital investment and funding. This was consistently cited by participants from both sectors as the primary reason for initiating PPPs in the first place. Participant 004 stated, "*the first thing that they bring is they bring investment and funding. That's the reason why the main reason why these things exist, because governments don't have the funding*". Additionally, Participant 007 echoed this by saying "*the private sector brings the money, they bring the expertise, and they bring the demand*". Participant 010 added that "*the private sector is able to partner with different private sector companies and then come in as a consortium and be able to fund large scale projects*". This ability to mobilize capital, as noted by Participant 001, is often "*more efficient and cost-effective than public sector fundraising because the perceived risk for investors is lower when the private sector is involved*".

Beyond capital, the private sector is seen as an important contributor of specialised expertise, skills, and technology. Participant 004 highlighted that "*a successful*

*private partner will bring significant expertise and technology as part of the consortium*". Furthermore, Participant 006 broke this down into three key areas which are "*funding, capability, and capacity*". Moreover, he explained that the private sector brings "*specialised skills to execute on these projects that government or the public sector does not necessarily have*". This includes practical, operational experience gained from other jurisdictions. Participant 008 noted that an international train operator brings "*learnings from those countries of how to do things properly*", which represents a significant advantage over a public entity that has only ever operated in one jurisdiction.

This contribution also extends to a culture of innovation as noted by Participant 004 who mentioned that it is "*just part of the private sector that they innovate, and they bring innovation with*". Additionally, this was confirmed by Participant 005 from the public sector, who acknowledged that the private sector can "*bring some of those innovative solutions that may not be readily available to the public sector*". Furthermore, Participant 015 supported this, arguing that "*the private sector's agility means they're not married to service designs that become inefficient over time*". Therefore, "*they are very good at innovating*".

#### Sub-theme 4.2: Driving Efficiency, Execution, and Accountability

A core belief expressed by nearly all participants was that the private sector introduces a fundamentally different and more effective operational culture, one that is focused on efficiency, cost-effectiveness, and timely project execution. This culture is driven by its commercial mandate and its direct accountability to shareholders and financiers. Participant 004 described how the private sector brings "*capital efficiency delivery on the scope*". Participant 006 explained that "*people that sit in government don't necessarily have the experience or the mandate to drive commercially as hard as the private sector*".

This commercial drive is rooted in the motive for profits, which encourages discipline that is often perceived as absent in the public sector. Participant 007 acknowledged that PPPs "*drive economic decisions and a move towards profit making*", which naturally ensures a focus on performance and returns. However, Participant 002 contrasted the two sectors with plain clarity: "*if you are not profitable, your company closes. Government, if they are not economically successful, they just carry on, they bail out, they borrow more money*".

This inherent accountability leads to better project management and execution. Participant 008 explained that private sector leadership is "*always on check*", whereas in the public sector, there is often less direct accountability for poor performance. This culture of accountability ensures that projects are more likely to be delivered on time and within budget, as failure has immediate financial and reputational consequences. Participant 009 captured this dynamic perfectly, stating that private companies "*have got skin in the game. If they don't do it properly, they will either be dismissed or they will fall by the wayside*", a contrast to public employees who get paid regardless of operational outcomes. Participant 017 added that this focus on project management excellence means private firms can often deliver projects "below budget and ahead of schedule".

#### Sub-theme 4.3: The Private Sector's Contribution to Planning and Regulation

While the public sector is responsible for setting the macroenvironment plan and the overarching regulatory framework, the private sector plays an important supporting and influential role by leveraging its practical expertise. In the planning space, the private sector contributes at the detailed project level by bringing its technical and operational knowledge to the forefront. Participant 004 explained that "*through their expertise, the private sector will bring planning insights of timing and delivery of the solution*". In addition, Participant 006 elaborated on this, noting that the private sector provides the "*level of detail that's required to execute projects*", translating a high-level government ambition into a detailed, daily, and trackable project plan that gives funders confidence. However, in some instances, due to a perceived lack of strategic capacity in some SOEs, the private sector has had to take a more proactive role by practicing "*forward thinking and setting platforms for what PPPs should look like*".

According to the participants, the private sector's role in influencing regulation is more indirect and advisory. Participants were clear that the private sector should not be writing the regulations themselves to avoid conflicts of interest and to maintain a "*Chinese wall between the regulator and the entities that's being regulated*". However, its critical role is to provide input, feedback, and influence to ensure that the regulatory process results in a framework that is practical, bankable, and enabling. Participant 004 stated that the role the private sector can play is "*to influence and provide inputs to the public sector, who is responsible for regulation*". Additionally, Participant 005 supports this suggesting that the private sector has a

*"good opportunity to lobby some of the regulators to review some of the regulations and the rules that are currently there that make it less attractive for them to partner with public entities".*

In essence, the private sector is viewed as an essential component in delivering a PPP. Therefore, it provides the financial fuel, the technical horsepower, the operational discipline, and the commercial acumen required to transform a public mandate into a functioning, efficient, and successful infrastructure project.

#### Theme 5: Challenges and Mitigation Strategies in PPP Implementation

The final and critically important theme to emerge from the data revolves around the significant and multifaceted challenges encountered when attempting to implement PPPs in the South African logistics sector, alongside the corresponding strategies proposed by participants to mitigate these obstacles. Despite the strong theoretical case and clear need for PPPs, participants from both the public and private sectors described a practical landscape fraught with difficulties, ranging from institutional bureaucracy and regulatory complexity to linked to trust issues and political uncertainty.

##### Sub-theme 5.1: Identified Challenges in PPP Implementation

A consistent sub-theme that emerged was the immense challenge posed by time delays, bureaucracy, and slow execution from the public sector. The perceived difference in pace to get things done between the two sectors was a major source of frustration for private participants. Participant 006 identified *"time to execute"* as a primary challenge, stating that working with the public sector *"is quite challenging because they just do not move at the speed that the private sector does"*. Furthermore, Participant 002 pointed to *"the time it takes to get approvals to move on a project"* as one of the "two big frustrations". Participant 009 was particularly critical of the *"red tape"*, and added that it is, unnecessary *"hoops that you have got to jump through"*. In addition, Participant 018 who is a public sector employee, acknowledged this issue and referred to *"a lot of red tape, especially from the public sector side"* as a *"hindrance"*.

These delays are often compounded by complex and sometimes regulatory and legal hurdles. Participant 005 from the public sector stated that *"the regulation*

*frameworks*" are a major challenge which creates an environment that is "not friendly to partnering". Participant 002 mentioned that there are "*so many legal issues*" and "*so much governance that you have to plough through to get to the point where I'm going to invest the money*". Therefore, this creates a complex, costly, and uncertain environment for potential investors, as noted by Participant 014 who explained that "*the strict regulatory framework was tightened after state capture*" which made it "*literally impossible to secure partners for PPP opportunities*".

Another fundamental challenge identified by several participants is the lack of trust and divergent objectives between the two sectors. Therefore, Participant 002 highlighted the difficulty of dealing with partners who "*do not take each other seriously*". Participant 005 acknowledged that there is "*often at times a trust deficit between the public and private sector*". This is exacerbated by a perception that the government may not be fully committed to seeing projects through to completion. Additionally, Participant 004 warned of the "*risk of government cancelling projects late in the process after the private sector has already invested significant time and resources*", which happens when "*government is actually not serious about*" the project. Participant 002 spoke of the loss of trust in South Africa's public sector's ability "*to actually attract private funding*".

Other significant challenges that were frequently mentioned include the following:

#### *Political Risk and Instability*

The influence of changing political cycles and ministers on the long-term viability and continuity of PPPs was a major concern. Participant 006 warned that "*a change in the political dispensation*" could undermine existing agreements and philosophies around private sector involvement. Participant 010 identified "*regulatory uncertainty*" and a "*lack of stable policy direction*" as the first thing private sector players mention as a concern.

#### *Employment and Labour Issues*

The complexities of taking over an existing workforce from a public entity, dealing with powerful unions, and managing potential redundancies were seen as major operational and financial challenges that have killed deals in the past.

#### *Misalignment on Commercials and Risk*

Participants highlighted the difficulty in finding a middle ground on financial terms. Participant 009 pointed to the government's "*misunderstanding*" of the long-term investment horizons required, citing an initial offer of two-year slots as a reason for a lack of response. Participant 017 noted that deals structured by government often do not have an "attractive return" for an investor.

#### Sub-theme 5.2: Proposed Mitigation Strategies

In response to the challenges, the participants proposed several clear and actionable mitigation strategies. These strategies were centered on improving processes, building trust through transparency and engagement, and creating a more stable and predictable investment environment.

A key strategy that emerged was to learn from others and adopt proven best practices locally and abroad. Participant 004 noted that since South Africa is "late" in its rail reform, it has the advantage of being able to "learn from other entities" and countries that have successfully implemented PPPs. Furthermore, he mentioned that the government is attempting to do this, not only by looking at rail reform in other countries but also by drawing lessons from the successful renewable energy PPP process within South Africa itself. This involves bringing in people with prior experience, such as those from the Independent Power Producers (IPP) Office.

Another mitigation strategy that emerged from the participants was improved, early, and continuous stakeholder engagement which was seen as critical to PPP implementation. Participant 006 argued that conducting "stakeholder engagement with these projects well in advance can help to speed up approvals and build consensus from the outset". Furthermore, Participant 007 emphasized the need for constant communication to ensure alignment and functionality making the expression "engage, engage, engage, engage". In addition, Participant 011 stressed the importance of bringing in all stakeholders "early on" to understand concerns and avoid "nasty surprises" later in the process.

To counter the risks of uncertainty and misalignment, participants strongly advocated for clear, formal, and legally sound agreements and mandates. Participant 003 stated that a "clear set of rules of engagement that are established from the get-go" would facilitate the process. Participant 006 stressed that all collaborations "need to be formalised, written up, and approved by the governance bodies on both sides," as

informal arrangements are often "subject to dodgy transactions and deals" creating an opportunity for corruption.

Finally, there was a common call to simplify the regulatory environment and create a credible, professional institutional structure. Participant 005 argued that there is a clear opportunity for the government to "review some of these frameworks and also to simplify some of the regulations so that it is easier to collaborate". To build trust, Participant 015 suggested creating a "professional bureaucratic service" and a "credible structure like an IPP office, that the market trusts and resonates with". This would signal genuine commitment and ensure processes are run fairly and transparently. Additionally, having competent legal, financial, and technical advisors on both sides was seen as essential to navigating the complexity and structuring projects for long-term success.

## **5.5 Summary of Findings**

This chapter has presented a detailed thematic analysis of the qualitative data collected from eighteen interviews with public and private sector stakeholders involved in South Africa's logistics industry. The analysis, structured around five key themes derived from the research questions, reveals a complex but highly consistent narrative regarding the role, dynamics, and future of Public-Private Partnerships in the sector.

The findings indicate that PPPs are conceptualised primarily as a necessary and strategic collaborative response to significant and widely acknowledged public sector shortcomings, most notably a lack of funding, a shortage of specialised skills and expertise, and operational inefficiencies. The success of these partnerships is understood to be contingent upon several foundational elements such as clear alignment on common goals, well-defined roles and risk allocation, robust and transparent governance structures, and the establishment of a mutually beneficial financial model that ensures a viable return on private investment over a long-term horizon.

The developmental role of PPPs is seen as multifaceted and critical. They are viewed as essential mechanisms for restoring and rehabilitating national infrastructure that has deteriorated over the years by unlocking constrained capacity on the Richards Bay, Durban and Maputo corridors, and creating a culture of efficiency, innovation,

and cost-effectiveness into logistics operations. Additionally, successful projects like the Gautrain, the Maputo Port (MPDC), and various national toll roads in South Africa were consistently cited as tangible proof of concept. Taking a look into the future, PPPs are seen as presenting a significant opportunity to drive broader economic growth, enhance national competitiveness, and create a more robust and efficient logistics network, which is repeatedly described as the lifeblood of the South African economy.

The role of the public sector was clearly defined as that of an initiator for PPPs, the owner of the asset (infrastructure), and the protector of the public interest. Its primary responsibility is to create a stable, predictable, and enabling policy and regulatory framework. This task is seen as both critical and challenging, with existing regulations like the PFMA often posing significant bureaucratic hurdles. While the public sector's direct financial contribution to projects is limited by lack of available funds, its role in funding the PPP facilitation process and providing sovereign guarantees to de-risk investments is considered highly important.

On the contrary, the role of the private sector is to act as the primary engine of execution and delivery. It mainly contributes funding, technical and operational expertise, innovation, and the latest technology. The private sector's inherent commercial mandate and accountability structures are seen as the main drivers of efficiency ensuring that logistics infrastructure projects are delivered on time and within budget, and enhance overall operational excellence. While it is not responsible for writing regulations, it plays a key role to influence and advise on the policy draft and contributes to details of the project plan.

Finally, the analysis highlighted a broad set of challenges to PPP implementation. Some of the challenges include bureaucratic delays and red tape, a complex and often unfriendly regulatory environment, trust issues between the sectors, and significant political and policy uncertainty. Therefore, to overcome these challenges, participants recommended a suite of mitigation strategies which included learning from successful local and international examples like the Renewable Energy Independent Power Producers Programme (REIPPP), conducting intensive and early stakeholder engagement, formalising clear and robust legal agreements, and fundamentally simplifying the regulatory landscape while building credible, professional, and transparent public institutions to manage the process.

These comprehensive findings provide valuable insights from different perspectives and experiences, providing an understanding of the current state and future potential of PPPs in South Africa's logistics infrastructure sector. Therefore, these provide a foundation for the in-depth discussion, conclusions, and recommendations that will be presented in the next chapters.

## **6. Discussion**

### **6.1 Introduction**

In this chapter, the findings that were presented in Chapter 5 following the analysis process will be discussed in detail and interpreted. Therefore, the primary objective of this research, which was highlighted in Chapter 1, is to investigate the role of public-private partnerships (PPPs) in the development of new, upgrading and maintaining logistics infrastructure in an emerging economy, with a specific focus on South Africa's rail transport system. The study was guided by three research questions highlighted in Chapter 3, designed to explore the mechanics, roles, and challenges of the collaborations between the public sector and the private sector.

The research adopted a qualitative, explorative design, to gather insightful and narrative data through semi-structured interviews. The sample size was 19 participants from both the public and private sectors who have extensive experience in South Africa's logistics and infrastructure with professional backgrounds in mining, finance, and legal fields. The preceding chapter systematically analysed this data using thematic analysis, which identified five overarching themes that align with the research questions.

This chapter provides insights that are beyond the findings presented in Chapter 5 with the intent of analysing and synthesizing the data at a lower level. Therefore, It aims to interpret the meaning and significance of the themes that emerged from the interviews by integrating the empirical data with the theoretical framework and existing literature highlighted in the literature review found in Chapter 2. Furthermore, the discussion will be structured thematically, following the sequence of the research questions to provide a consistent and logical narrative. In addition, the key findings for each question will be summarised and discussed in relation to relevant academic and industry literature, exploring points of convergence, divergence, and nuance.

The main goal of this chapter is to highlight the dynamics of PPPs in the development of infrastructure within the South African context. However, a consideration is taken with regards to the ownership of rail infrastructure and the challenges that led to a deteriorating national infrastructure base. Therefore, by weaving together the lived experiences of industry experts with existing literature, this discussion will explore the tensions, opportunities, and practical realities of leveraging private sector capital

and expertise to help the public sector address the issue of deteriorated infrastructure. Ultimately, this chapter seeks to articulate the study's primary theoretical and participant contributions that will provide solid foundation for the conclusions and recommendations that will follow.

## **6.2 Discussion of Research Question 1: How do Public-Private Partnerships Improve the Development of Infrastructure?**

Research Question 1 sought to understand the fundamental mechanisms in which PPPs contribute to the development of logistics infrastructure. Therefore, the findings that were presented in Chapter 5 revealed a multi-layered answer, defining PPPs not just as a transactional model but as a strategic response to systemic crises. The discussion of these findings is organised around three core pillars; firstly, the conceptualization of PPPs as a model of necessity; secondly, the critical success factors and inherent challenges impacting the implementation of PPPs; and thirdly, the role of PPPs as a catalyst for efficiency, restoration, and broader economic growth.

### **6.2.1 The Conceptualization of PPPs: A Collaborative Response to Systemic Failure**

The empirical findings demonstrate that there is a clear consensus among participants that PPPs are, at their core, a "structured collaboration between the public sector as the rail infrastructure owner and the private sector entities". This aligns with the literature, which defines PPPs as long-term relationships and collaborations between public and private sectors to achieve shared objectives (Tan & Zhao, 2021). Furthermore, participants consistently framed this collaboration as an effort to "pull resources from the public sector and the private sector" and leverage the "best of both worlds". Therefore, this idea of leveraging complementary strengths which sees the public and private sectors "join hands to address logistics infrastructure challenges" is a core principle of PPPs, which highlights that such partnerships can create value by combining public sectors' mandate with private sector efficiencies.

However, the findings in Chapter 5 introduce an important and urgent nuance to the theoretical definition of PPPs in the context of South African logistics infrastructure. The rationale for this collaboration was not seen as a first-choice option for

infrastructure development between various alternatives but as a "necessary evil" and an essential response to public sector shortcomings. The literature highlights that governments globally turn to PPPs to address infrastructure development challenges such as design, financing, and maintenance. However, on the contrary, the participants in this study painted a different picture that emphasised the need for the private sector to collaborate with the public sector.

Therefore, the mismanagement of public finance is identified as the primary driver behind the necessity to opt for PPPs (Burke & Demirag, 2019). This takes into consideration that SOEs like Transnet are perceived as having been "ravaged by state capture" and left with "no money" and are unable "to raise funds themselves". Moreover, this aligns with the literature that highlights how a lack of capital investment leads to infrastructure deterioration (Bouraima et al., 2023). Participant 010, who works in the public sector confirmed this reality by stating that government "doesn't have sufficient fund to really fund the required infrastructure".

In addition to the financial challenges experienced by the public sector, it is perceived that there is a shortage of "expertise," "capacity," and "operational efficiency" in the public sector. Participant 008 contrasted the public sector's "poor service delivery" and "red tape" with the private sector's basic nature to drive for "efficiencies". This sentiment was echoed by Participant 003, who argued that an "absolute efficiency gain" is expected from PPPs because "state companies are typically not run like private companies".

Therefore, while the literature provides a functional definition of PPPs as a collaborative model (Vogel et al., 2022), the findings in Chapter 5 contribute an important context for emerging economies with failing SOEs. From a South African context where infrastructure has deteriorated over the years, PPPs are not only an option for infrastructure development, but they are considered as a critical intervention for infrastructure preservation. Furthermore, the private sector is positioned not just as a partner but as a sponsor that is tasked with providing capital, skills, and commercial discipline necessary to rescue the deteriorating rail infrastructure. This "rescue" framing profoundly shapes the dynamics, expectations, and inherent tensions of the partnership, moving it from a balanced collaboration to a more complex relationship of dependency.

### 6.2.2 Success Factors and Systemic Challenges

The study's participants identified a clear set of components that are critical for the success of PPPs, which both support and add real world insights to the existing literature. Insights from multiple participants suggest that the foundational requirement for a "common goal" and "alignment on what is it that we're trying to achieve" resonates with the literature's emphasis on achieving shared societal and economic objectives (Vogel et al., 2022). Similarly, the need for "clarity on the roles and responsibilities" and an "appropriate transfer of risks" directly reflects the importance of well-defined commercial structures discussed in existing literature presented by George et al. (2024) and Burke and Demirag (2019).

Furthermore, the requirement for "full transparency" and a "good governance structure" supports the findings in existing literature that it is important to have good governance in PPPs to mitigate against risks such as corruption and attracting bad investors (Casady et al., 2020). Additionally, participants insisted on having a "bankable" financial model that allows the private sector to "earn a return", which underscores the commercial realities of these partnerships. Therefore, the literature acknowledges that private funding is important to the model (Zhang & Leiringer, 2023), but the interviews indicate that although the funding provided by the private sector, it is not out of kindness because they require a return on investment. As Participant 003 stated, "it cannot be a situation where one party is subsidising the other". Additionally, PPPs require long-term agreements of "25 years or more" which will enable the private sector to amortize the large capital investments made (Casady et al., 2020). Moreover, this is an important and practical insight that adds a specific commercial dimension to the theoretical concept of "long-term relationships".

Although there are several factors that contribute to making PPPs successful, there are various challenges that can make it difficult to implement PPP (George et al., 2024). The challenges identified by participants such as a "lack of transparency, trust deficits, and conflicting interests" support the insights highlighted by George et al (2024) in the literature review. However, the empirical data from this study brings these theoretical challenges to life with a powerful, context-specific intensity. The common challenge that was identified in the interviews is the negative effect of public sector "red tape", bureaucracy, and slow decision-making. Participant 006 highlighted a common frustration by noting that the public sector "just don't move at

the speed that the private sector does". This "different clocks" phenomenon creates friction and uncertainty, an insight that is not emphasised enough in theoretical discussions.

The interviews highlighted that the current regulation landscape is "unfriendly" due to the restrictive nature of certain Acts such as the Public Finance Management Act (PFMA), which was identified as a major structural barrier. This finding empirically supports the literature's claim that policy and regulatory frameworks are important factors of PPP adoption and success (Burke & Demirag, 2019). In a South African context, as described by the participants through their experiences, demonstrates a "regulatory paradox". Insights suggest that the existing governance frameworks designed to prevent corruption and ensure accountability have become a constraint for the formation of public-private partnerships needed to overcome the consequences of corruption and mismanagement of public funds (Casady et al., 2020). Therefore, the public sector tends to leverage private sector capabilities to provide public services but the misalignment of the rules and regulation, and goals from each sector results in the regulatory paradox.

Moreover, the challenge of political risk and instability that is mentioned in the literature by Casady (2021), emerged as a dominant concern for the participants. The fear of "a change in the political power and governance" or a shift in policy direction can create an uncertain environment that is toxic to the long-term and high-capital investments required for infrastructure PPPs. This was a concern that was highlighted by Participant 010, who referred to "regulatory uncertainty" as one of the concerns for investors from the private sector. Therefore, this finding suggests that for PPPs to be successful, it requires stability and predictability in the political and policy environment because they are not "nice to haves" but are non-negotiable prerequisites.

### **6.2.3 The Role of PPPs: Restoration, Efficiency, and Economic Enablement**

The participants' perspectives on how PPPs improve infrastructure development touched on two primary functions. Firstly, restoration and efficiency enhancement. Given the South African context of a deteriorated and ageing rail infrastructure (Bouraima et al., 2023), the immediate role of PPPs is seen as to restore the condition of the infrastructure (Godongwana, 2025). Participant 004 emphasised that the focus is on "restoration than building new", while Participant 013 highlighted

the need for a "rehabilitate, operate, and transfer PPP model" specifically for these "brownfields projects" which are existing infrastructure. Therefore, this finding contributes a significant and useful real-world insight to existing literature, which often discusses PPPs in the context of new infrastructure development projects.

The South African case presented in the interviews suggests that in countries with a legacy of state-owned infrastructure, the primary application of PPPs may be to rehabilitate existing infrastructure (brownfields) rather than focusing on new infrastructure projects (greenfield). Furthermore, the successful case of the Maputo Port, frequently referenced as an "exceptional example" where private sector participation led to substantial expansion and operational improvement. This insight from the interviews serves as a powerful testament to this restorative potential from PPPs.

Secondly, is the injection of efficiency which supports the evidence from the literature highlighting that PPPs can lead to increased efficiencies by leveraging private sector capabilities (George et al., 2024). Participants explained that this happens through improved turnaround times, increased volumes leading to economies of scale, and the introduction of a commercial mindset that is driven by "bottom line demands". Additionally, the Gautrain was repeatedly mentioned by the participants as an example that demonstrated operational efficiency and a "world class transport system" achieved through a PPP structure. Ultimately, these improvements in infrastructure are not considered as an end goal themselves but rather as a stepping stone towards something bigger and significant which can enable national economic growth (Zou et al., 2022).

Therefore, this aligns with the literature, which suggests a positive relationship between quality logistics infrastructure and economic activity such as export flows and GDP growth (Park, 2020). Participant 003's insightful analogy of logistics as the "veins of your economy" where constrained flows tend to "stagnate growth" sums up this view. Continuing with this analogy, by improving the "blood flow" of commodities, PPPs are seen as a tool to stimulate "trade and general economic upliftment", "unlock economic growth", and "create jobs" which was cited by several participants. This supports the argument that infrastructure investment is an important economic driver, particularly for developing countries like South Africa (Zou et al., 2022). These findings position PPPs not just as a mechanism to fund

infrastructure projects but as a strategic component of national economic policy. Moreover, it is essential for unlocking the country's productive capacity and enhancing its global competitiveness (Zou et al., 2022).

### **6.3 Discussion of Research Question 2: What is the Role of the Public Sector?**

The aim for research question 2 was to explain the specific role of the public sector within the PPP ecosystem. The findings from the interviews reveal a complex and often conflicting role as the public sector is expected to make a profit while serving public interest. While the very need for PPPs is born from public sector inefficiencies, participants from both sectors articulated an essential and foundational role for the state. The public sector is not a passive or silent partner because it owns the infrastructure, drafts the regulatory frameworks and policies, and is the guardian of the national interest. Therefore, this discussion will explore the key facets of this role as the initiator, custodian, and as the regulatory authority. In addition, as a contributor to planning and funding while integrating these empirical findings with the theoretical literature.

#### **6.3.1 The Public Sector as Initiator, Asset Owner, and Guardian of Public Interest**

A unanimous view emerged across the interviews that the public sector must be the primary initiator of PPPs. The reason behind this view is because national logistics assets like rail lines and ports are public property. Therefore, the decision to invite the private sector to participate in PPPs must originate from the state. As Participant 004 stated, "infrastructure is mostly a public sector domain. So therefore, they take the lead and drive the process". This aligns with the fundamental premise of PPPs, in which a state-owned entity (SOE) establishes a contract agreement with private entities to deliver a public project or service (George et al., 2024). This role is linked to the public sectors status as the ultimate owner of the infrastructure. Participant 008 was clear stating that "the assets will always belong to the public sector". Therefore, this ownership constitutes the public sector's most tangible contribution to the partnership by providing the infrastructure upon which the private sector can invest and operate.

However, this ownership comes with an important responsibility that cannot be passed on to private sector such as to act as the guardian of the public interest. Therefore, the literature on PPPs acknowledges that these partnerships aim to

achieve both economic and societal objectives (Vogel et al., 2022). Additionally, the findings from this study provides a clear explanation on dual mandate through practical examples. Participants emphasised that while the private sector is driven by a commercial mandate to "maximise shareholder value", the public sector must provide "oversight and ensure public interest is maintained". This guardian role involves having mitigation measures against exploitation, ensuring a sustainable public benefit beyond the life of a single project. Furthermore, it is important to guarantee "equitable access to these resources to any private participant". Moreover, this is important in preventing a scenario where a powerful private entity that has invested in public infrastructure to monopolise the access and disadvantage smaller entities which undermines the broader economic goals of the partnership. Therefore, the public sector acts as the moral compass of the PPP, balancing the private sector's legitimate pursuit of profit with the public sectors overarching duty to the public.

### **6.3.2 The Public Sector as Architect of the Policy and Regulatory Framework**

Another important function of the public sector, which was highlighted throughout the interviews is its role as the architect of the policy and regulatory environment. This finding supports the insights from the literature, highlighting that an enabling institutional and regulatory framework is a prerequisite for the public sector to attract private investment and ensuring the successful adoption of PPPs (Casady, 2021). As Participant 007 stated that "the public sector's role is to create a platform for PPPs," which starts with the "legislative framework" and the "regulatory overlay".

Various participants referred to specific and highly influential pieces of policy such as the White Paper on National Rail Policy, as the foundational document that created the political and strategic push for the current rail reform agenda. Furthermore, the development of the Roadmap for the Freight Logistics System in South Africa and the Economic Regulation of Transport (ERT) Act were also cited as important initiatives that are led by the government, designed to create a competitive and regulated environment for private participation. This legislative function is the sole responsibility of the government, with Participant 013 adding that the private sector can only lobby.

However, policy and regulation are areas where the public sector faces challenges, and internal conflicting interests becomes apparent. While the public sector is

responsible for creating an enabling environment for PPPs, it was frequently identified as the source of disabling it. Moreover, the Public Finance Management Act (PFMA) was also singled out numerous times and highlighted as a major regulatory hurdle. This was highlighted by participant 017 who described the PFMA as a source of "red tape" that becomes a "hurdle". Therefore, this reveals a serious problem because it has been that the public sector through SOE's need private investment to solve its infrastructure crisis. However, internal governance and procurement procedures that were designed to ensure a responsible management of state finances and prevent corruption (Casady et al., 2020), are so complicated that they discourage investment from the private sector. Therefore, participant 005 argues that in order to mitigate this challenge, a review and simplification of the current framework is required to make collaboration between the public and private sectors easier.

### **6.3.3 The Role of the Public Sector in Planning and Funding**

The public sector's contribution to planning is seen as essential at the strategic and macro level. Therefore, it is the responsibility and accountability of the public sector to develop national master plans, identify long-term infrastructure needs, and identify projects that are suitable for PPPs. This aligns with its role as the custodian of the nation's long-term development plan (Casady et al., 2020).

However, new insights from the interviews suggest that the public sector's role in funding is complicated and not straightforward as it considers various forms of financing beyond just monetary form. Therefore, because of this complexity, its inability to fund projects is the main driver of PPPs in the first place. Moreover, its financial contribution is not expected to be in the form of direct capital investment but through the provision of existing infrastructure that needs to be upgraded or maintained. As Participant 004 clearly stated that "the government is pursuing PPPs precisely because they do not have the funding to contribute as capital". However, instead of contributing financially, its funding role is understood as one of facilitation and de-risking.

In summary, the public sectors contribution may take various such as the following; firstly, funding the PPP process through the provision of resources to manage the PPP process such as staffing and expert advisory services (Zhang & Leiringer, 2023); secondly, providing sovereign guarantees to ensure that the PPPs are

bankable and implemented at the lower cost of capital by leveraging the state's access to direct foreign investment; lastly, by contributing existing infrastructure to the partnership on which private investment will be used to develop.

In conclusion, the role of the public sector is foundational and has various aspects to it. Moreover, it is the vision of the public sector that sets the national agenda and as the owner of the infrastructure provides the assets. Furthermore, it is the authority that sets the law, writes the rules, and provides sovereign guarantees that underwrite the risk. Although the public sector may not have financial capability and be operationally inflexible like the private sector, it holds an important and irreplaceable role of providing an enabling environment and being the regulator. The success of PPPs depends on the public sector being competent in executing this role with clarity and genuine political acumen to create a stable and attractive environment for private investment (Zhang & Leiringer, 2023).

#### **6.4 Discussion of Research Question 3: What is the Role of the Private Sector?**

Research question 3 sought to describe the private sector's role of in the development of logistics infrastructure through PPPs. Therefore, the findings from the various interviews provide a clear and compelling description of the private sector as the engine that drives the execution, innovation, and efficiency of PPP projects. Although the public sector initiates and provides the mandate and the platform, the private sector is considered as an irreplaceable stakeholder that brings the financial resources, technical expertise, and commercial discipline that is required to transform an infrastructure project from a plan phase right up to completion phase. Therefore, this discussion seeks to explore the core contributions of the private sector, its function as a driving force of operational excellence, and the role it plays to influence the planning and setting regulation.

##### **6.4.1 The Private Sector as the Engine of PPPs: Capital, Expertise, and Innovation**

The common theme that emerged from the interviews describing the of the private sector was its ability to raise and make funds available. Considering the public sectors financial challenges, this function is not just important, but it is the core foundation upon which most PPPs are built. Supporting this was Participant 004 who stated that "the first thing that they bring is they bring investment and funding. That's

the main reason why these things exist". Furthermore, this view is directly supported by the literature which identifies private funding as an important element of the PPP model, especially in developing countries where government budgets are stretched (Almeile et al., 2024). The private sector's access to various financiers and financial markets, and its ability to form consortiums to fund "large scale projects" are considered as strong capabilities that are lacking in the public sector.

Moreover, another and equally important contribution is the providing specialised skills, technical expertise, and innovation (Zhang & Leiringer, 2023). In addition, the literature highlights that the private sector is able to bring expertise to logistics infrastructure projects (Burke & Demirag, 2019). This is supported by the interview findings that provide rich and realworld insights on what this entails, including "significant expertise and technology", "specialised skills to execute on these projects", and practical "learnings from other countries". This infusion of knowledge from other countries and best practice is considered to be very important for modernising an aging and under-resourced infrastructure network such as the South African rail network. Participant 017 highlighted that "access to private sector expertise removes some of the operational burden from SOEs", which allows the public sector to focus on their core mandate of public service delivery while leveraging private sector project management and execution capabilities.

Furthermore, the private sector is perceived as a primary source of innovation, which was emphasised by Participant 004 noted, it is "just part of private sector that they innovate". In addition, this is driven by the competitive and commercial environment in which private firms operate (George et al., 2024). Participant 015 supports the argument by stating that private entities are "not married to service designs that become inefficient over time" and are therefore "very good at then innovating" to improve service and reduce costs. Therefore, this innovative capacity comes in various forms such as technology, financing structures, and operational processes, highlighting the value proposition that the private sector brings to the partnership.

#### **6.4.2 Driving Efficiency, Execution, and Accountability**

Besides contributing tangible resources such as money and technology, the private sector leverages on technical and commercial expertise to uphold efficiencies, disciplined execution, and accountability (George et al., 2024). Therefore, this characteristic is a result of its commercial mandate and the persistent pressure to

deliver a return on investment. Participant 006 shares a view highlighting the difference between the private sector and public sector officials arguing that the latter "don't necessarily have the experience or the mandate to drive commercially as hard as the private sector". This commercial drive is the mechanism that encourages the private sector to focus on performance.

This concept of having "skin in the game" was mentioned in the interviews more than once as it emerged as a common theme. Therefore, it highlights the fundamental difference in accountability structures between the public and private sectors. However, Participant 002 shared a contrasting but interesting view stating that a private company that is not profitable "closes," while an unsuccessful government entity "just carry on". Therefore, this inherent risk of failure inspires a level of discipline in the execution of PPPs and operations that are perceived to be absent in the public sector. This is supported by Participant 009 who added that "private companies have to make it work, otherwise they will fall away".

This level of accountability translates into excellent logistics infrastructure project execution and management as a result of private sector participation. Moreover, there is a common perception among participants that the private sector's focus on project management excellence leads to projects being delivered "on time", with Participant 017 citing, "often below budget and ahead of schedule". However, this is the opposite compared to the public sector's track record on the implementation of mega-projects, which often result in significant time and cost overruns . Therefore, the private sector is thus seen as the stakeholder that can help the public sector break this cycle by creating a culture where deadlines are met, infrastructure project run below budgets, and performance is measured against clear commercial outcomes.

#### **6.4.3 The Private Sector's Contribution to Planning and Regulation**

Although the drafting of regulation and planning roles is mainly the responsibility of the public sector, the private sector plays an important role in both areas by playing an influential role using its experience, knowledge and expertise.

With regards to planning, the private sector provides relevant and important information, and data at the "level of detail that is required to execute logistics infrastructure projects ". Additionally, it translates the public sectors high-level

strategic goals into detailed, feasible, and "trackable" project plans through effective project management. This involves providing insights to prepare realistic timelines for project planning and execution based on its technical expertise and operational experience. The interview findings support this view arguing that in a context of SOEs lacking strategic foresight due to several years of crisis management, participants stated that the private sector had to step up by engaging in "forward thinking and establishing platforms that would shape the idea of what PPPs should look like".

In the regulatory space, the private sector's role is to influence the content and objectives, and act as an advisor and lobbyist. Interview participants provided new insights on roles and responsibilities regarding regulation stating that, "to maintain integrity and avoid conflicts of interest, there must be a "Chinese wall" between the regulator and the entities that's being regulated". Therefore, this means that the private sector does not write the rules of the game but actively participate to ensure that the regulations drafted by the public sector are realistic and practical, commercially viable, and create an environment to attract investment. Therefore, its role is "to influence and provide inputs to the public sector". As Participant 005 suggested, the role involves "actively lobbying regulators to review some of the regulations and the rules that make it less attractive for the private sector to join the partnership". Therefore, this positions the private sector as a critical feedback mechanism that helps to shape a regulatory environment that balances public interest with the commercial realities that are required to attract and sustain private sector investment.

In summary, the primary role of the private sector is to ensure that the PPP is delivered successfully because it is responsible for the provision of funding, technical expertise, and commercial discipline. Therefore, ensuring that there is a culture of accountability that drives efficiency and successful project execution. Furthermore, it is tasked with the big responsibility of transforming the public sectors socio-economic objectives into tangible and successful infrastructure projects.

### **6.5 Theoretical and Managerial Implications**

The comprehensive analysis of the data gathered from the research interview, integrated with the literature from the existing body of knowledge. Furthermore, this yielded several significant implications for both the theory on PPPs and the real-world

implementation and management of logistics infrastructure projects in South Africa and other countries with emerging economies that are facing similar challenges. Therefore, this section synthesizes the implications by highlighting the key contributions of the research study to the academic discourse and offering actionable insights for public and private sector leaders.

### **6.5.1 Theoretical Contributions**

This research seeks to contribute to the existing literature on Public-Private Partnerships in several important ways which include the following:

#### *Contextualizing PPPs as a "Rescue Mechanism"*

While the literature generally defines PPPs as a collaborative model for infrastructure development (Vogel et al., 2022), this study provides a deeper contextualized model for developing countries that are challenged with the failure of state-owned enterprises. The overwhelming framing of PPPs by participants as a "necessary evil" and a response to systemic failure adds a critical dimension to the theory. Therefore, this suggests that in such contexts, the primary function of a PPP shifts from being a proactive approach to developing infrastructure to a reactive approach by rescuing and rehabilitating infrastructure.

#### *Empirically Validating the Brownfield vs. Greenfield Distinction*

The study empirically weighs in on the practical distinction between PPPs for new infrastructure "greenfield" projects such as the Gautrain and Private Sector Participation (PSP) for the rehabilitation of existing infrastructure "brownfield". Some participants argued that the rigid and time-consuming nature of traditional PPP frameworks is not suited for the urgent rehabilitation needs of the deteriorating rail infrastructure in South Africa. Therefore, this suggests that in a South African context, commercially driven PSP models that are flexible may be a more appropriate theoretical construct for brownfield infrastructure restoration or rehabilitation. This distinction is a significant contribution to existing literature that often discusses PPPs in generic terms.

### *Highlighting the "Regulatory Paradox" in Developing Nations*

The findings highlight an important "regulatory paradox" that is a constraint for PPP implementation. Therefore, the public sector that needs private sector investment to overcome the consequences of historical governance failures due to state capture is also the author of the stringent regulatory frameworks such as the PFMA that was designed to prevent history from repeating itself. However, this creates a situation where the strict regulation risks destroying the ability of the public sector to attract private investment. This paradox, established from a specific political and economic history of South Africa, represents a significant challenge for PPP theory and practice in countries with developing economies and presents an opportunity for future academic research.

### *Emphasizing the "Different Clocks" Phenomenon*

The study provides insightful qualitative evidence of the clear disconnect between the public and private sectors related to the "different clocks" phenomenon mentioned by one of the participants. The argument was that the "private sector's need for speed, agility, and timely approvals" is the total opposite of the "public sector's slow, bureaucratic, and politically influenced decision-making processes". While the literature acknowledges that there is a coordination challenges between the two sectors, this research raises the issue of time and pace as one of the main obstacles.

## **6.5.2 Managerial and Business Contributions**

Beyond its theoretical implications, this study provides a set of practical and actionable insights for the public sector as the policymakers, and private sector stakeholders that involved in logistics infrastructure.

### **For Public Sector Leaders and Policymakers**

#### *Acknowledge and Address the Regulatory Paradox*

The public sector as the policymakers must recognise that although complex and rigid procurement and governance frameworks like the PFMA have good intentions, they are also a constraint for private investment. According to the insights from the interviews, there is a request for simplified regulations and the creation a specific,

streamlined legislative framework for PPPs and PSPs that create a balance between robust governance with the need for commercial agility. Therefore, the success of the Renewable Energy Independent Power Producer Procurement (REIPPP) program's specialised IPP Office was cited as a credible model example.

*Build Credible and Capacitated PPP Units*

To build this credible unit, the public sector must invest in building professional, skilled, and politically protected units to manage the PPP process. Therefore, these units must recruit individuals who have strong commercial and investor relations experience background who will be empowered to make decisions. This is important for building trust and demonstrating that the government is a credible and serious stakeholder.

*Embrace Early and Authentic Stakeholder Engagement:*

The findings demonstrate that by bringing stakeholders together such as private bidders, organised labour, and communities into the process in the early stages is not optional but essential for the success of the PPP. Therefore, this proactive engagement can pre-empt conflicts, build consensus, and ensure that the final structure of the project is realistic and supported by all stakeholders.

*Be Realistic About Risk Allocation and Commercials:*

Public sector should appoint commercially experienced negotiators that will move away from a "free carry" mentality and approach PPPs as real partnerships. Moreover, this requires a realistic understanding of the long-term investment horizons that is needed to build private sector confidence. Furthermore, it is important to have the willingness to share risks appropriately, including the provision of sovereign guarantees where necessary to ensure project bankability.

**For Private Sector Leaders and Investors**

*Factor in Resilience and Long-Term Commitment*

The findings from the interviews clearly highlight that engaging in PPPs in South Africa is not a short-term opportunity. It requires significant "persistence and resilience". Therefore, companies from the private sector must be prepared for

lengthy negotiation processes and have mitigation plans for political and regulatory risk into their financial and strategic models from the beginning.

### *Prioritize Proactive Lobbying and Relationship Building*

The private sector cannot afford to be a passive bidder. Therefore, it must play an active role by influencing and shaping the policy and regulatory environment through formalised business forums and direct engagement with government departments such as the Department of Transport. Moreover, building relationships and establishing trust over a period of time is as important as presenting a technically sound bid.

### *Form Strategic Consortiums:*

One of the private sector's strengths is its ability to collaborate with different private sector companies and present bids or proposals as a consortium. Therefore, this approach allows for crowd funding, the combination of diverse technical expertise (e.g., finance, engineering, operations), and the sharing of the significant risks involved.

### *Clearly Articulate the Value Proposition Beyond Profit:*

Although a commercial return on investment is non-negotiable, it is important for the private sector stakeholders to highlight their projected contribution to broader national socio-economic goals, such as job creation, skills transfer, and economic growth. Moreover, aligning the project's narrative with the public sector's developmental mandate can be a valuable mechanism in building political support and ensuring project success.

## **6.6 Conclusion**

This chapter has attempted to move beyond a simple presentation of findings to valuable insights, interpretive discussion that synthesises the empirical evidence from 18 interviews (19 participants) with the established theoretical literature on Public-Private Partnerships. The analysis that was structured around the three core research questions that highlighted the complex, challenging, and yet necessary role of PPPs in the context of South Africa's deteriorating logistics infrastructure, particularly rail infrastructure.

The main argument that is emerging from this discussion is that PPPs in South Africa are not just an option to choose from among various infrastructure development models, but they are perceived as an essential rescue mechanism for infrastructure preservation. Therefore, they are a strategic response to an infrastructure crisis experienced by the public sector due to capital constraints, operational inefficiencies, and a lack of specialised skills. However, the private sector is assigned the role of a PPP delivery agent, tasked with the provision of funding, expertise, and commercial discipline required to carry out the execution of rehabilitating and modernising critical logistics infrastructure. On the other hand, the public sector retains the irreplaceable role of initiator, infrastructure owner, and architect of the regulatory framework that enable these types of partnerships.

However, the path to successful implementation remains unclear with significant obstacles. A clear “regulatory paradox” for the public sector, the two sectors operating on "different clocks," a persistent trust deficit, and the existence of political uncertainty creates a barrier for progress. Therefore, overcoming these challenges requires a concerted and collaborative effort that is centered on simplifying regulations, building credible public institutions, engaging stakeholders early and authentically, and approaching negotiations with a spirit of true partnership and realistic commercial understanding.

Furthermore, the findings and this subsequent discussion have significant implications, offering a clearer theoretical understanding of PPPs in developing countries with emerging economies and provides actionable insights for leaders from both the public sector and private sector. Moreover, the study emphasises that for South Africa to unlock its economic potential and restore its logistics network, it must successfully navigate the complexities of these public-private collaborations. The next chapter will build upon this discussion to present a set of concrete recommendations and conclude the research.

## **7. Conclusions and Recommendations**

### **7.1 Introduction**

This final chapter serves to synthesize and conclude the research journey undertaken to investigate the role of public-private partnerships (PPPs) in the development of logistics infrastructure in South Africa. The objectives of the study were to address a critical research problem that focuses on the deterioration of South Africa's national rail infrastructure due to a lack of capital and capacity in the public sector, and the subsequent need to understand how collaborations with the private sector could offer a realistic and sustainable solution. The purpose of this research was to explore the fundamental mechanisms, roles, challenges, and opportunities associated with PPPs in the development of rail logistics infrastructure in the South African Context.

To achieve the research objective, the study followed a qualitative and explorative methodology in which in-depth interviews were conducted with nineteen experienced experts from both the public and private sectors. Chapter 5 presented the findings derived from a thematic analysis of the data from interviews and Chapter 6 provided an in-depth discussion by integrating the empirical findings with the existing theoretical literature.

Therefore, this chapter seeks to bring the study to a logical and coherent conclusion. It begins with a high-level summary of the key findings and themes that emerged from the research interviews. Additionally, it will present the conclusions for each research question based on the synthesis of empirical data and theoretical literature. Furthermore, several recommendations will be provided for both public and private sector stakeholders with the objective of improving the implementation and success of future PPPs in developing countries like South Africa.

Moreover, the chapter will reflect on the limitations of the research and acknowledge the boundaries of its scope and methodology. Finally, it will propose several opportunities for future research to build upon the insights gained from this study, before provided final and concluding remarks that summarises the intended message from this study.

## **7.2 Summary of Key Findings**

The thematic analysis of the eighteen interviews discussed in Chapter 5 provided insightful and a consistent set of findings that provided different perspectives and views about PPPs in the context of logistics infrastructure in South Africa. Therefore, a summary of the key findings is discussed below.

### **7.2.1 On the Nature and Role of PPPs**

The research found that PPPs are not considered as a preferred solution to address logistics infrastructure challenges but as a secondary solution but as a necessary response to systemic public sector failure. Participants from both sectors provided a similar definition for PPPs highlighting that it is structured and leverages the strengths from both sectors. However, the primary driver for PPPs was identified as the public sector's financial constraints, lack of specialised expertise, and operational inefficiencies. Consequently, PPPs are viewed as a critical "rescue mechanism" for deteriorating national assets.

However, the success of PPPs was found to be dependent upon several foundational elements. such as These include a common goal, clear roles and responsibilities, fair risk allocation, transparent governance processes, and a financial model that bankable for the duration of the PPP to ensure a return on investment. Furthermore, in the South African context, the primary role for PPPs in the development of infrastructure is to restore and rehabilitate the existing rail infrastructure termed as "brownfields". Considering the current economic pressures to ensure the country remains competitive in the global economy from a trade perspective, improvements in logistics infrastructure is necessary to unlock operational efficiencies. These efficiencies can enable economic growth through improved product flows.

### **7.2.2 On the Role of the Public Sector**

The findings highlight that the public sector has a complex role with a multi-facet objective from the PPP. Considering that there is only one government, the public sector cannot be replaced by another sector. Therefore, as the owner of the infrastructure it needs to uphold public interest at all times. Moreover, it performs a critical function as the architect of national policy and the regulatory environment by setting the "legislative framework" that governs these partnerships. However, this was identified as a source of major challenges because existing regulations such as

the Public Finance Management Act (PFMA), was frequently cited as a significant "hurdle" and a source of "red tape" that creates a disabling environment. Additionally, the public sector's role in funding is also complicated because while it lacks the funding required for logistics infrastructure projects, its contribution is seen as essential in funding the PPP process. The public sector provides sovereign guarantees to de-risk infrastructure projects and contributing the existing infrastructure to the partnership.

### **7.2.3 On the Role of the Private Sector**

The private sector was consistently referred to as the "engine of execution" in PPPs throughout the interviews. Therefore, its primary and most important contribution to the PPP is the provision of capital and funding. It was concluded in the interviews that the private sector can raise funding quicker than the public sector. Moreover, beyond funding, the private sector provides expertise, new technology, and leveraging from global best practices to create opportunities for innovation. Most importantly, the private sector is seen as the stakeholder that will drive efficiency, timely execution, and accountability from all stakeholders, creating a culture that follows a commercial mandate. In addition, this, the private sector strives to deliver projects within budget as it is accountable for cost effectiveness and a return on investment. While not the primary author of regulations, the private sector also plays an important influential role in contributing to detailed project planning and lobbying for a practical and enabling regulatory framework.

## **7.3 Conclusions of the Study**

This section presents the conclusions of the research by addressing the three research questions that guided this study. These conclusions are not just a re-iteration of the findings, but they present a higher-level synthesis, which draw upon the integrated analysis of empirical data and theoretical literature presented in Chapter 5 and Chapter 6.

### **7.3.1 Conclusion for Research Question 1: How do Public-Private Partnerships improve the development of infrastructure?**

In the context of a developing economy like South Africa with deteriorating state-owned logistics infrastructure, the study concludes that Public-Private Partnerships improve the development of infrastructure. This is achieved by the private sector's

involvement and using its ability to provide funding, project specific expertise, and creating a culture of commercial efficiency into a failing public system.

This conclusion considers several aspects; firstly, PPPs are not a common solution for the development logistics infrastructure projects in South Africa but should be considered as an option to rescue the current state of logistics infrastructure because the public sector does not have the capital to fund these projects. The research demonstrates that PPPs are perceived as the final option to salvage and restore national assets that have been "destroyed by state capture" and underinvestment. Therefore, PPPs are framed as collaborations that can leverage complementary strengths.

Secondly, the improvement mechanism can be broken down into three components, including the first component which is access to private funding. The second component is access to specialised expertise, latest technology, and innovation. The third component is the introduction of private sector efficiency and accountability. This ensures that projects are delivered on time and within budget and avoids the bureaucracy and red tape in the public sector.

Thirdly, the study also concludes with a new insight indicating that there is an important between PPPs which are applicable for new infrastructure "greenfield" and private sector participation (PSP) for existing infrastructure "brownfield" assets. However, these new insights present an opportunity for future studies.

Ultimately, for logistics infrastructure projects, PPPs creates an opportunity to raise private funding to cover the affordability, expertise to ensure the quality of the infrastructure, and efficiency to complete the project in time. Therefore, PPPs are not just a mechanism for improving physical infrastructure, but they enable broader economic growth for a country.

### **7.3.2 Conclusion for Research Question 2: What is the role of the public sector?**

The study concludes that the role of the public sector in PPPs is irreplaceable as the ultimate owner of the assets and the architect of the rules that govern the solution.

This is a fundamental role because PPPs cannot exist without the public sector. Additionally, the public sector must be the primary initiator, as the national infrastructure is public property and it needs to ensure that these infrastructures

enable public service delivery. Therefore, the decision to invite private sector participation rests solely with the public sector. As the owner of the assets, the public sector contributes the existing infrastructure—upon which the private sector builds and operates. Furthermore, it ensures that the commercial objectives of the private sector are balanced with the broader socio-economic development goals of the country.

Another critical role of the public sector is to draft the policy and regulatory framework. The policy and framework create an "enabling environment" through foundational policies like the White Paper on National Rail Policy and the Economic Regulation of Transport (ERT) Act. However, the findings further reveal a perception that the public sector is also "disabling" the environment, primarily through the cumbersome and restrictive nature of the Public Finance Management Act (PFMA) and public sector "red tape".

Finally, when it comes to funding, the public sector's is considered to be a facilitator because they do not contribute actual funding to PPP projects. Instead, it contributes to funding PPPs in a form of funding the institutional capacity to manage the PPP process by leveraging its sovereign power to provide guarantees that make projects bankable, and by contributing its existing assets as a form of capital investment. Therefore, the role of the public sector is to be an active, sovereign partner that creates a stable, predictable, and enabling environment for private investment.

### **7.3.3 Conclusion for Research Question 3: What is the role of the private sector?**

For research question 3, the study concludes that the role of the private sector is that it serves as the engine of execution in a PPP. It goes beyond the provision of funding to fuel infrastructure projects as it provides commercial discipline, operational expertise, and it creates a culture of accountability required to deliver PPPs. The most common role of the private sector is to provide funding which the public sector is lacking. . This role as the finance provider is the foundation upon which the modern South African PPP model is built.

However, the research strongly concludes that its contribution extends far beyond just "the money". The private sector is the primary source of specialized expertise, modern technology, and innovation. It brings a wealth of practical experience, often from international contexts, which is vital for modernizing aging infrastructure and

implementing global best practices. This includes a culture of innovation driven by competitive pressures, leading to more agile and efficient service designs.

While the private sector is not the author of national policy and regulation, it plays an important role by influencing the planning function and regulation. This includes providing finer details on the planning required to ensure that PPPs are feasible, trackable, and achievable.

## **7.4 Recommendations**

This section presents several actionable recommendations that are based on the conclusions derived from the research findings in Chapter 5 and the discussion in Chapter 6. These are directed to both the public sector and the private sector to address the key challenges identified during the research interviews. Additionally, the recommendations seek to provide a practical framework for enhancing the effectiveness and success of future PPPs in the South African logistics infrastructure sector.

### **7.4.1 Recommendations for the Public Sector and Policymakers**

The public sector owns the infrastructure. Therefore, it is responsible to create an enabling environment that is conducive to private investment for PPPs in the development of infrastructure. Therefore, the objective for the following recommendations is to address the systemic and procedural challenges identified by the research participants.

*Recommendation 1. Acknowledge and Urgently Address the "Regulatory Paradox" by Reforming the PFMA for Infrastructure Partnerships.*

Through the research interviews, the Public Finance Management Act (PFMA) and its associated "red tape" were identified as the primary structural barrier to the timely and efficient implementation of PPPs. Therefore, although the current framework was designed to manage public finances it is perceived to not enable PPPs and creates debilitating delays that deter private investment.

The National Treasury should collaborate with the Department of Transport and the Presidency to establish a streamlined procurement and governance framework for infrastructure development through PPPs. However, this framework should not be

considered as a replacement for the PFMA but should be seen as a set of regulations that balances governance requirements and anti-corruption measures with the need for commercial agility and speed.

*Recommendation 2. Establish a Centralized, Credible, and Capacitated PSP Unit Modelled on the IPP Office.*

The success of the Renewable Energy Independent Power Producer Procurement (REIPPP) program's specialised IPP Office was cited as a credible model for managing complex partnerships such as PPPs. Participants expressed a deep need for a professional public entity that has the right skills and is protected from politics to manage the PPP process and build market confidence and trust.

Therefore, the government should establish a PPP unit that is fully empowered and has the resources to carry out the PPP mandate. Additionally, this unit should be located within an institution like the DBSA to protect it from political interference. This unit must comprise of professionals with good financial background and understand commercial realities, and be able to manage complex projects. Furthermore, its mandate should be to act as a one-stop-shop for all PPP projects that are infrastructure related. Some of the key activities that this unit will be responsible for include transparent sourcing activities, contracting and managing PPP. This would create a single, credible counterparty for the private sector, significantly reducing uncertainty and transaction costs.

*Recommendation 3. Adopt a Pragmatic and Realistic Approach to Risk Allocation and Commercial Terms.*

The findings highlighted that PPPs are often delayed due to misaligned commercial expectations between the two sectors. Therefore, the public sector is often perceived as seeking a "free carry" or offering commercially unviable terms, such as very short concession periods (less than 10 years). However, for PPPs to be successful a win-win financial model is required where both parties' interests are met.

The public sector must have a negotiating team that is well trained and must be given the mandate to approach PPPs as true partnerships. This involves a realistic understanding of the long-term investments of 20 to 25 years that are required by the private sector to amortise large capital investments. Furthermore, the public

sector must be willing to accept and retain risks that it is best placed to manage, particularly political and regulatory risks. Moreover, it should proactively use instruments like sovereign guarantees to de-risk projects and make them bankable. This is to ensure that it attracts a wider pool of private investors and lowering the cost of capital.

*Recommendation 4. Institutionalize Early and Authentic Stakeholder Engagement.*

The research highlighted that delaying stakeholder engagement with important partners such as organized labour and affected communities, may lead to significant conflict and delay the infrastructure project. Therefore, early stakeholder engagement is not optional, but it is essential for building consensus and ensuring long-term project stability.

Moreover, a mandatory requirement for PPPs should be to establish a structured stakeholder engagement framework that is integrated with the infrastructure project lifecycle from the beginning. Furthermore, the public entity as the initiator must conduct roadshows and workshops with key stakeholders such as potential bidders from the private sector, industry bodies, organized labour, and community representatives. The objective is to identify and address areas of concern during the early stages and incorporate feedback into the scope and ensure that it is realistic, supported by all, and socially sustainable.

#### **7.4.2 Recommendations for the Private Sector and Investors**

The private sector must navigate through the complex and uncertain environment of PPPs particularly in South Africa. Therefore, the following recommendations are suggested to help private sector entities engage more effectively and increase their chances of success when participating in South African infrastructure PPPs.

*1. Adopt a Strategy of Proactive Engagement and Relationship Building.*

The findings suggest that the private sector cannot afford to sit and wait for the perfect PPP opportunity but should proactively engage the public sector and identify opportunities for collaboration. Considering that the regulatory and policy environment is complex, and the public sector often does not have the commercial

and technical insights to structure PPP deals on its own, the private sector should have proactive and continuous engagements with the public sector to lobby and build relationships with, relevant government departments and SOEs. However, this should be done through established business forums such as Business Unity South Africa (BUSA) to ensure a coordinated and influential voice.

### *2. Prepare for Long-Term Commitment and Build Resilience into Project Models.*

According to the research it is clear that PPP processes in South Africa are long and subject to significant delays due to uncertainty. Therefore, companies wishing to participate in PPPs must practice patience and resilience because of extended negotiation periods and potential political or regulatory delays. Additionally, a significant contingency for time and legal costs should be planned for. Moreover, private sector investors should not enter PPPs seeking quick returns on investment because success in PPPs requires a long-term strategic commitment.

### *3. Form Strategic Consortiums to Pool Resources and Mitigate Risk.*

Logistics infrastructure projects require a large sum of funding and a diverse range of technical and commercial expertise. Therefore, the research highlighted that the private sector's ability to form partnerships with different private sector entities to create a consortium" is a key strength and should use this approach when bidding for PPP projects. This approach helps raise fund and mobilise resources faster.

## **7.5 Limitations of the Research**

In line with academic rigour and transparency, it is essential to acknowledge the limitations inherent in this research design and execution. Therefore, these limitations define the boundaries of the research and provide context for interpreting its findings and conclusions. The research followed a qualitative mono-method that relied exclusively on semi-structured interviews for data collection. While this approach provided rich, in-depth, and clear insights into the experiences and perceptions of the participants, it lacked the quantitative data needed to validate the findings using statistics and measure the exact economic impact of PPPs. Therefore, the study relied on the participants perceptions of efficiency gains that could not be quantified due to a lack of statistical data.

The time horizon for the study was cross-sectional, capturing a "snapshot" of the situation at a specific point in time. Therefore, this approach does not allow for the analysis of how perceptions, policies, and the effectiveness of PPPs evolve over a period time. Furthermore, a longitudinal study which tracks a project or policy over several years, would be required to assess the long-term outcomes and sustainability of the public-private partnerships being discussed.

Moreover, the research used a non-probability purposive sampling technique to select participants based on their expertise and experience. While this sampling technique ensured the collection of high-quality and relevant data from knowledgeable individuals, the sample is not statistically representative of the entire logistics and infrastructure sector in South Africa. Therefore, the findings, reflect the views of this specific expert group and cannot be generalised to the broader population of the logistics and infrastructure sector with statistical confidence. Furthermore, the sample was heavily weighted towards the private sector made up of 13 out of 18 participants, meaning the findings reflect more of a private sector perspective.

Similar to any qualitative research, there is a potential for researcher bias to exist in the interpretation of data during analysis and the manual formulation of themes. Although a systematic thematic analysis process was followed to ensure rigour, the researcher's own professional background and perspectives could subconsciously influence the data analysis. On the contrary, another researcher analysing the same data might have identified slightly different nuances or themes.

The research was deliberately focused on the South African logistics infrastructure sector, particularly rail. While this research provided rich contextual insights, it also limited the ability of getting a broader general perspective of the findings to other countries, or even to other sectors within South Africa such as healthcare and education. However, the unique historical and political context of South Africa which includes the legacy of state capture and the specific nature of the country's SOEs, means that the challenges and dynamics identified may not be directly applicable in other countries or industries without careful consideration.

Another limitation to the study, particularly the analysis section, is the researchers experience in using analysis tools such as Atlas.ti. The researcher struggled to navigate through the system but eventually managed to download the codebook.

However, the analysis gathering of themes was concluded manually using interview notes and going through the transcripts.

## **7.6 Suggestions for Future Research**

The insights and limitations of this research create several opportunities for future research that could add to the current body of knowledge and further enhance the understanding of PPPs in South Africa and beyond.

To complement the qualitative findings from this research, future research could use a quantitative methodology to measure the actual impact of PPPs on the development of logistics infrastructure. Therefore, this could involve an econometric analysis comparing the performance metrics such as turnaround times, volume fluctuations, cost-per-ton, and revenue generation of an asset operated by an SOE before and after a PPP or PSP intervention. Alternatively, conduct a comparative analysis between privately-operated terminals and publicly operated terminals. This would provide the statistical evidence needed to validate the perceived efficiency gains discussed by the interview participants.

This study was cross-sectional and conducted at a time when major rail PSPs are anticipated but not yet implemented. Therefore, a valuable future research project could be a longitudinal case study that can track one or more of the upcoming PSPs from inception right through to implementation phase and into the operational phase over a period of 5-10 years or more. This would provide invaluable real-time insights into the challenges, successes, and dynamics of these types of partnerships. This would encourage a move away from the place of expectation to lived experience.

Moreover, to test the broader general perspective of the findings, a comparative research would be beneficial. This could take two forms; firstly, a study comparing the implementation of PPPs in the South African rail sector with the more mature REIPPP program in the energy sector could yield critical lessons on what makes a successful PPP framework and what institutional factors are key to its success; secondly a comparative study analysing South Africa's experience with another developing country with an emerging economy that has a similar history of state-owned infrastructure such as Brazil and India, could help distinguish between universal PPP challenges and those that are unique to the South African context.

## **7.7 Concluding Remarks**

This research embarked on an exploration journey of a topic that is at the centre of South Africa's economic future through the revival of the country's critical logistics infrastructure through public-private partnerships. The journey sought through the experiences and insights of 19 industry experts has painted a clear and unambiguous picture. The finding emphasised that the nation's logistics network, the heart of its economy, is in a critical state. Additionally, the public sector is constrained by a legacy of mismanagement of state funds and cannot remedy the situation alone.

The conclusion is clear that PPPs in their various forms are not another option of preference but are a necessity for the development of logistics infrastructure. They represent the most viable path to raise the capital, employ expertise, and implement efficiencies required to restore the deteriorated national assets and unlock the country's economic potential. Based on the interviews, the private sector is ready to drive the execution and commercial discipline that ensures delivery and performance.

However, the path leading forward is not simple as it is obstructed by a legacy of mistrust, bureaucracy, and a regulatory environment that often hinders more than it helps. Therefore, the success of PPPs depends on the political will of the public sector to become a true, credible, and enabling partner. As the asset owner and the regulating body it must simplify its rules, build professional institutions, and realistically share in the risks. For the private sector, PPPs demand resilience, a long-term commitment, and the willingness to align commercial goals with the nation's broader social developmental aspirations. Therefore, the road is complex and challenging, but as this research has shown, it is a road that must be travelled. The successful navigation of this road will determine whether South Africa's continues to stagnate or surges forward over the next few years.

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## Appendices

### Appendix 1 – Interview Guide

#### Introduction:

#### 1. Greeting and Introduction

- 1.1. Welcome the participant and the researcher introduce themselves.
- 1.2. Briefly explain the purpose of the interview and research study.
- 1.3. Assure confidentiality and obtain consent to record the interview

#### 2. Participant Background Information

- 2.1. Do you work in the public or private sector?
- 2.2. Can you tell me about your career background and your role in the logistics and infrastructure sector?
- 2.3. How long have you been involved in the logistics and infrastructure sector?

#### Research Questions

#### 3. Research Question 1: How do Public-Private Partnerships improve the development of infrastructure?

- 3.1. How would you define Public-Private Partnerships (PPPs) in the context of logistics infrastructure development?
- 3.2. What key components would make PPPs successful in this sector?
- 3.3. In your experience, what role do PPPs play in the development of logistics infrastructure?
- 3.4. Can you provide examples of successful PPP projects in logistics infrastructure that you have been part of or are aware of?
- 3.5. How do PPPs impact the efficiency and cost-effectiveness of logistics operations?
- 3.6. In your experience, what are the main challenges experienced when implementing PPPs in logistics infrastructure projects?
- 3.7. How can these challenges be mitigated?
- 3.8. What opportunities do PPPs present for the future development of logistics infrastructure?
- 3.9. How do public and private sector stakeholders collaborate to ensure the success of PPP projects?

#### 4. Research Question 2: What is the role of the public sector?

- 4.1. What role does the public sector play in PPPs for the development of logistics infrastructure?
- 4.2. How does the public sector contribute to the planning, funding, and regulation of PPP projects?
- 4.3. Can you mention any specific policies or regulations that have significantly influenced PPP projects in this sector?

**5. Research Question 3: What is the role of the private sector?**

- 5.1. What role does the private sector play in PPPs for the development of logistics infrastructure?
- 5.2. How does the private sector contribute to the planning, funding, and regulation of PPP projects?
- 5.3. Can you provide examples of how the private sector's contribution can enhance PPP projects?

**Conclusion**

**6. Additional Comments, Thank you, and Next Steps:**

- 6.1. Ask if the participant has any additional comments or insights on the topic that they would like to share.
- 6.2. Thank the participant for their time and valuable insights.
- 6.3. Explain the next steps in the research and how their input will be used.

## Appendix 2 – Consistency Matrix

Research Questions	Literature Review	Data Collection Tool - Interview Questions	Analysis
<b>Research Question 1: How do Public-Private Partnerships improve the development of infrastructure?</b>	Liu & Song (2020) Bouraima et al. (2023) Department of Transport (2023) Zou et al. (2022) Vogel et al. (2022) Zhang and Leiringer (2023) Casady (2021) George et al. (2024)	Questionnaire: Question - 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9	Thematic Analysis
<b>Research Question 2: What is the role of the public sector?</b>	Casady (2021) Department of Transport (2023) Zou et al. (2022) Godongwana (2025) Zhang and Leiringer (2023)	Questionnaire: Question - 4.1, 4.2, 4.3	Thematic Analysis
<b>Research Question 3: What is the role of the private sector?</b>	Casady (2021) Department of Transport (2023) Zou et al. (2022) Godongwana (2025) Zhang and Leiringer (2023)	Questionnaire: Question - 5.1, 5.2, 5.3	Thematic Analysis

### Appendix 3 – Informed Consent Form



**Informed consent letter:**

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA.

I am conducting research on the role of public-private partnerships (PPPs) in developing logistics infrastructure and am trying to find out more about the roles and responsibilities for each stakeholder. Our interview is expected to last about an hour and will help us understand the benefit of developing rail logistics infrastructure using PPPs and how it can be implemented. **Your participation is voluntary, and you can withdraw at any time without penalty.** All data will be kept confidential and reported without identifiers. If you have any concerns, please contact my supervisor or me. Our details are provided below.

**Researcher name:**

**Research Supervisor Name:**

Email:

Email:

Phone

Phone:

Signature of participant: \_\_\_\_\_

Date: \_\_\_\_\_

Signature of researcher: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix 3 – Code book

Research Question (Reference to Chapter 4)	Codes	Category	Themes
a	b	c	d
Research question1	<ul style="list-style-type: none"> <li>• Collaboration</li> <li>• Collaboration difficulties</li> <li>• Public-Private Partnerships</li> <li>• Public-Private Partnerships: National importance</li> <li>• Public-Private Partnerships: Private Sector Impact</li> <li>• Public-Private Partnerships: Private sector involvement</li> <li>• Public-Private Partnerships: Public sector management</li> <li>• Public-Private Partnerships: Public sector responsibility</li> <li>• Public-Private Partnerships: Public sector role</li> <li>• Public-Private Partnerships: Public-Private Partnerships</li> <li>• Public-Private Partnerships: Public-Private Partnerships (PPP)</li> <li>• Public-Private Partnerships: Public-private partnerships (PPPs)</li> <li>• Public-Private Partnerships: Stakeholder Satisfaction</li> <li>• Stakeholder collaboration</li> </ul>	<ul style="list-style-type: none"> <li>• Public-Private Partnerships</li> <li>• Collaboration</li> <li>• Stakeholder collaboration</li> <li>• Collaboration difficulties</li> </ul>	<ul style="list-style-type: none"> <li>• Theme 1: Defining and Conceptualizing Public-Private Partnerships</li> </ul>

<p>Research Question 2</p>	<ul style="list-style-type: none"> <li>• Infrastructure development</li> <li>• Infrastructure improvement</li> <li>• Project Development</li> <li>• Project Development: Capital projects management</li> <li>• Project Development: Investment mobilization</li> <li>• Project Development: Project identification</li> <li>• Operational efficiency</li> <li>• Economic growth</li> <li>• Economic impact</li> <li>• Improvement</li> <li>• Opportunity for improvement</li> <li>• Continuous improvement</li> <li>• Expertise: Successful examples</li> <li>• Public-Private Partnerships: Private Sector Impact</li> <li>• Public-Private Partnerships: Public sector role</li> </ul>	<ul style="list-style-type: none"> <li>• Key Components for Success</li> <li>• Success</li> <li>• Role clarification</li> <li>• Roles and responsibilities</li> <li>• Risk management</li> <li>• Systemic challenges: Risk sharing</li> <li>• Transparency</li> <li>• Resource allocation</li> </ul>	<ul style="list-style-type: none"> <li>• Theme 2: Key Components, Role, and Opportunities of PPPs</li> </ul>
<p>Research question 3</p>	<ul style="list-style-type: none"> <li>• Public Sector Roles and Responsibilities</li> <li>• Public-Private Partnerships: Public sector role</li> <li>• Public-Private Partnerships: Public sector responsibility</li> <li>• Public-Private Partnerships: Public sector management</li> <li>• Role clarification</li> </ul>	<ul style="list-style-type: none"> <li>• Contract management</li> <li>• Public sector inefficiencies</li> <li>• Political interference</li> </ul>	<ul style="list-style-type: none"> <li>• Theme 3: The Role of the Public Sector</li> </ul>

	<ul style="list-style-type: none"> <li>• Roles and responsibilities</li> <li>• Policy, Regulation, and Funding</li> <li>• Regulation</li> <li>• Regulatory framework</li> <li>• Policy development</li> <li>• Funding challenges</li> <li>• Systemic challenges: Policy gap</li> <li>•</li> </ul>		
Research question 2 & 3	<ul style="list-style-type: none"> <li>• Core Contributions (Capital, Expertise, Innovation)</li> <li>• Expertise (and its variants like Expertise (2), Expertise: Perspective on expertise, Expertise: Successful examples, and Expertise: Tenure)</li> <li>• Innovation</li> <li>• Project Development: Investment mobilization</li> <li>• Funding challenges (Often cited as the reason the private sector is needed for funding)</li> <li>• Operational Role (Efficiency and Accountability)</li> <li>• Accountability</li> <li>• Operational efficiency</li> <li>• Project Development: Capital projects management</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Public-Private Partnerships: Private Sector Impact</li> <li>• Public-Private Partnerships: Private sector involvement</li> <li>• Role clarification</li> <li>• Roles and responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>• Theme 4: The Role of the Private Sector</li> </ul>
Research question 1	<ul style="list-style-type: none"> <li>• Challenges</li> </ul>	<ul style="list-style-type: none"> <li>• Problem-solving</li> <li>• Continuous improvement</li> </ul>	<ul style="list-style-type: none"> <li>• Theme 5: Challenges and</li> </ul>

	<ul style="list-style-type: none"> <li>• Systemic challenges (The overarching issue)</li> <li>• Systemic challenges: Implementation delays (Relates to bureaucracy/red tape)</li> <li>• Systemic challenges: Policy gap</li> <li>• Systemic challenges: Community neglect</li> <li>• Systemic challenges: Competitive Environment</li> <li>• Trust issues (Relates to trust deficit)</li> <li>• Infrastructure Challenges</li> <li>• Regulatory challenges</li> <li>• Funding challenges</li> <li>• Mitigation Strategies and Solutions</li> <li>• Risk management (A core mitigation)</li> <li>• Systemic challenges: Risk sharing (A specific mitigation strategy)</li> <li>• Stakeholder engagement (A key mitigation strategy)</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement</li> <li>• Process improvement</li> <li>• Opportunity for improvement</li> <li>• Transparency (A foundation for building trust)</li> <li>• Infrastructure improvement</li> </ul>	<p>Mitigation Strategies in PPP Implementation</p> <ul style="list-style-type: none"> <li>•</li> </ul>
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