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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

The role of Special Economic Zones in facilitating sustainable urban development – A case study of the Tshwane Automotive Special Economic Zone

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A research report submitted to the Wits Graduate School of Governance in the University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in Governance (Development and Economics)

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Johannesburg, 2025

ABSTRACT

This qualitative case study examines the role of special economic zones in facilitating sustainable urban development, using the Tshwane Automotive Special Economic Zone as a case study. The research explores the nature and functions of special economic zones and investigates the relationship between special economic zones and cities as well as whether this relationship facilitates sustainable urban development. Lastly, the research analyses the related policy and governance gaps as well as opportunities for special economic zones to facilitate sustainable urban development.

As part of the research study, data was collected from primary and secondary sources. The results reveal that special economic zones like the Tshwane Automotive Special Economic Zone have the potential to contribute towards economic growth, job creation, and spatial transformation. Additionally, flexible governance arrangements can promote positive links between the special economic zone and host city. However, there are challenges such as a disconnect between special economic zone policies and urban development frameworks, the disproportionate distribution of benefits and resource constraints.

The study concludes that special economic zones can play a part in facilitating sustainable urban development subject to addressing policy and governance gaps as well as capacity constraints. The research recommends policy reform to the special economic zones legislative framework landscape to incorporate principles of sustainable urban development and intergovernmental partnerships. This research contributes to understanding the complex relationship between special economic zones and sustainable urban development by offering insights for policymakers and urban planners.

KEY WORDS

Sustainability; urban development; special economic zones; environmental; City of Tshwane Municipality; cities

DECLARATION

I, Amanda Nyingwa, Student No. 1671655, declare that this dissertation is my own unaided work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in Governance (Development and Economics) at the Wits Graduate School of Governance in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other University.

Signature: …….

On this …… day of ……20 ……..

Name

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LIST OF ACRONYMS

Acronym	Full form
AIDC	Automotive Industry Development Centre
CoT	City of Tshwane Metropolitan Municipality
CPC	Community Project Committee
CSIR	Council for Scientific and Industrial Research
EIA	Environmental Impact Assessment
ESG	Environmental, Social and Governance
FDI	Foreign Direct Investment
GCRO	Gauteng City Region Observatory
GDED	Gauteng Department of Economic Development
GPG	Gauteng Provincial Government
GVC	Global Value Chain
IDZ	Industrial Development Zone
IDP	Integrated Development Plan
LED	Local Economic Development
MNC	Multinational Corporation
NEMBA	National Environmental Management: Biodiversity Act
NEMA	National Environmental Management Act
NSDP	National Spatial Development Plan
PFMA	Public Financial Management Act
RSDF	Regional Spatial Development Framework
SARCHI	South African Research Chain in Industrial Development
SEZ	Special Economic Zone
SMME	Small, Medium and Micro Enterprise
SPLUMA	Spatial Planning and Land Use Management Act
SUD	Sustainable Urban Development
TAC	Tshwane Automotive City
TASEZ	Tshwane Automotive Special Economic Zone
TIPS	Trade and Industrial Development Strategies
the dtic	Department of Trade, Industry and Competition

TOD	Transit Orientated Development
UNCTAD	United Nations Conference on Trade and Development

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1. INTRODUCTION

1.1. Context

Special Economic Zones (SEZs) are spatially delineated industrial policy mechanisms, which provide fiscal and regulatory incentives as well as physical infrastructure to support the activities of investors located within the zone (Bost, 2019). Initiated under a specific law or set of laws, SEZs are identified by four distinct characteristics. Zeng (2019) records these as follows: distinct physically secured boundaries, a zone management facility or administration, benefits for investors within the zone and lastly, streamlined procedures and facilities to support the ease of doing business for zone tenants. Furthermore, SEZs are regarded as special due to a combination of location specific advantages. Firstly, these zones operate under a different regulatory regime from the rest of the economy, which is often more advantageous regarding issues of labour, land use, and foreign investment (Narula & Zhan, 2019). Secondly, SEZs are normally equipped with efficient customs services and consist of facilities which provide specific services such as one-stop-shops that fast-track registration and licensing (Woolfrey, 2013). Thirdly, SEZs offer better and more reliable infrastructure compared to the domestic economy and lastly, consist of fiscal regimes that enable zone investors to enjoy capital freedoms and certain levels of tax incentives including subsidies (Narula & Zhan, 2019).

To date there are nearly 5400 SEZs globally, spread across 140 countries (United Nations Conference on Trade and Development [UNCTAD], 2021). As a consequence, a broad range of SEZs exists namely free trade zones, freeports, export processing zones, as well as trade and economic zones. Woolfrey (2013) suggests that the basis for this is that countries adopt different names for SEZs to distinguish their offerings from those of their competitors. However, overall, only a few SEZs have lived up to expectations and can be considered truly successful with very few of those located in Africa (UNCTAD, 2021). Yet many developing countries across the world continue to develop SEZs (Rodríguez-Pose et al., 2022).

Governments and policy makers develop SEZs for a variety of reasons that comes down to stimulating macroeconomic and socioeconomic benefits. Farole (2011) argues that countries launch SEZ programmes to overcome investment barriers within

the wider economy. Gleaning from Farole (2011), Ziedina & Pelse (2014) note that SEZs are also adopted by governments to attract foreign investment and promote export-oriented growth, which facilitates participation in global value chains. Narula and Zhan (2019) emphasize that a successful SEZ indicates that the country is “open for business”, given that SEZs can be regarded as avenues which provide first-world infrastructure in conjunction with bureaucratic and administrative efficiency at globally competitive prices.

According to the World Bank (2017), zone development is also motivated by an attempt to reap the agglomeration benefits that arise from the concentration of industries close to one another. Industrial agglomeration reduces operating costs, enhances efficiencies and improves the competitiveness of firms located in SEZs. In addition, the clustering of firms in and around SEZs can create avenues for labour pools than can benefit from SEZ-based firms (Neumark & Simpson, 2014). Thus, SEZs can serve as pressure valves to address high unemployment rates (Hazakis, 2014). In addition, SEZs are also launched by governments to ignite lagging territories by attracting new businesses through a favourable business climate and capitalising on spillovers to local economies for the achievement of long-term economic growth (World Bank, 2017). Notably, spillovers and local productivity gains are contingent on deliberate interaction between SEZ- and non SEZ-based firms. Furthermore, Hazakis (2014) notes that SEZs can also serve as living labs for the testing and application of new economic policies as well as technologies.

Regardless of motive, research indicates that the most successful SEZs are those located within proximity of urban areas as opposed to remote areas (World Bank, 2017; Farole and Sharp, 2017). According to Li et al. (2023), economic zones are an essential foundation of cities and urban development plays a decisive role in industrial economic development. Cities and urban areas offer a host of benefits that are crucial for the development of industrial zones including skilled workforce, diverse markets, capital, and easier access to other firms (Allam & Jones, 2019). Urban areas also offer upgraded transport networks and communication infrastructure, facilitating easier movement of people, goods, and information (Xu & Wang, 2020). In return, the establishment of SEZs can catalyse investment in supporting infrastructure, including transport, water and sewerage, as well as electricity and housing, not only within the

zones but also in the periphery, including urban areas. Xu and Wang (2020) highlight that SEZs can be critical levers for addressing unprofitable urban sprawl in cities, particularly in Africa by virtue of their relatively concentrated spatial pattern and specialized functions that help to optimise urban land use. In cities, SEZs can also act as decongestants and support sustainable development, provided that their value proposition is based on high environmental, social and governance (ESG) standards (Wessendorp et al., 2020).

Notably, the mutual benefits between urban areas and SEZs are not always guaranteed. For example, if the development of the SEZ lacks the supporting role of the city, it will cause urban fragmentation such as home and work separation, traffic congestion, and environmental pollution (Li Cao & Cui, 2023). If the urban area loses the driving role of the industry located within the SEZ, it will lead to problems such as industry hollowing-out, insufficient stamina towards urban development, and a decline in residents' living standards (Gan et al., 2022). As a result, a clear basis coupled with targeted interventions and measures is required for facilitating the symbiotic relationship between SEZs and host cities.

With more countries, including South Africa, developing SEZs within urban areas, it is important to acknowledge that SEZ development occurs in parallel to mega events affecting urban areas such as increasing urbanisation and climate change. These events are compelling urban developers and planners to intimately understand the all-encompassing approach of sustainable urban development (SUD) as well as investigate and identify potential levers for operationalising SUD. Consequently, this brings to surface several questions and in particular, whether SEZs as constructs of industrial policy, and spatial transformation can contribute towards SUD.

In view of the above, this study investigates the role of SEZs in facilitating SUD. As part of this, the nature and functions of SEZs are explored to understand the extent to which these factors enable or impede contributions towards SUD. In addition, the relationship between cities and SEZs is examined with the intention of analysing the compatibility of SEZs in supporting the SUD objectives of cities. The study also investigates SEZ policy and governance mechanisms to understand the gaps and opportunities in view of the role of SEZ in facilitating SUD.

To conduct this study, a qualitative case study research design was adopted to enable in-depth examination and to gain a comprehensive understanding of how SEZs can facilitate SUD. The Tshwane Automotive Special Economic Zone (TASEZ) located within the City of Tshwane Metropolitan Municipality (CoT) was selected as the case study site. To gather the necessary data, semi-structured interviews were conducted with purposely selected key informants and relevant policies and planning documents were analysed. The collected data was analysed using the thematic analysis approach, which enables the presentation of results into themes, thus providing insights into the potential of SEZs to foster SUD.

1.2. Problem statement

To date, 15 SEZs have been designated in South Africa and there are plans to declare more in future (South African Business, 2023). Six of the existing SEZs are located within urban areas. In parallel, urban geographies nationally are adopting SUD practices in order to build resilient ecological, social and economic processes (Musakwa & Niekerk, 2015). Notably, the country's journey towards SUD at city level has been complex and characterised by a disconnect between policy and implementation (Phosho & Gumbo, 2022). Additionally, the vestiges of apartheid spatial planning remain largely entrenched in urban development pathways of a post-apartheid South Africa. This makes efforts towards SUD that much more challenging. To this end, concerted efforts across various stakeholders coupled with the coordination and usage of diverse governance levers and policy interventions are needed to bridge the policy and implementation divide towards achieving SUD (Phosho & Gumbo, 2022).

According to Luthuli and Houghton (2015) as reflected in Houghton (2016), SEZs as spatially targeted policy interventions can be leveraged by cities to contribute towards SUD. Nel and Rogerson (2014) further corroborate this point and suggest that the SEZ programme could be seen as a further step in building a more spatially infused economic and industrial policy framework integrative of cities in South Africa. Despite this recognition, the role of SEZs in South Africa as conduits and contributors towards SUD is underappreciated with limited clarity on how these economic engines can be co-opted to support the realisation of SUD.

Nationally, SEZs and their hosting urban areas remain largely divided. As a result, a large share of SEZs in urban areas is not fully embedded as key features of the hosting city's urban fabric and development goals. The reasons for this divide are multiple and stem from various fronts. According to Farole and Sharp (2017) SEZs are often spatially developed and located along the edges of metropolitan areas. Due to this, Robbins (2025) argues SEZs can be seen as tools for the distribution of economic activity beyond the metropolitan centres rather than a means for enriching ongoing urban economic development. This approach can firstly, give rise to edge city development, which can perpetuate existing apartheid spatial segregation patterns and increase urban sprawl, thus deepening socio-economic divisions across different dimensions (Mnyandu, 2021).

Secondly fragmented spatial and urban development planning with respect to urban and industrial areas can perpetuate the SEZ and hosting city chasm (Farole & Sharp, 2017). Thirdly, Todes and Turok (2018) identify poor leadership and coordination amongst spheres of government responsible for SEZ development, and local economic development as another reason for the SEZ and urban area divide. To put this into context, South Africa's principal planning instrument on SEZs, the SEZ Act (16 of 2014), does not refer to cities, urban areas or SUD. To this end, no formal relationship is recognised between SEZs and hosting urban areas. The consequence of this is an ad hoc and somewhat uncertain relationship between hosting cities and SEZs.

Collectively the drivers outlined above of the city and SEZ divide point towards various challenges and consequences that emerge as a result of poor linkages between SEZ and cities. As a start, SEZs will largely operate as enclaves where development and investments are witnessed within or immediately around the zone (Farole & Sharp, 2017). As a result, limited local market integration and spillovers to the hosting urban area occurs. Therefore, the developmental impact of the SEZs as linked to job creation, attracting investors, and stimulating local economic development is poorly realised in the local region (Todes & Turok, 2018).

Secondly, following zone development, cities may take on substantial liabilities in financing bulk and related infrastructure investment linked to the zones, particularly if

the zone is located in the urban edge. This can create challenges for cross subsidisation of the investment costs through sharing with other users. For example, following the development of the East London Industrial Development Zone, the Buffalo City Municipality inherited the responsibility for R 250 million worth of roads, electricity substations and wastewater infrastructure, with no additional support from the other spheres of government responsible for SEZ development (Farole & Sharp, 2017).

Thirdly, cities may struggle to provide a facilitative environment to support investment in key supply chains linked to lead investments within the SEZ due to disparate development strategies (Farole & Sharp, 2017). This includes provision of industrial land and estates and upgrading of older estates, as well as regulatory simplification and service provision. The spatial divisions in Port Elizabeth with the Coega Special Economic Zone (Coega SEZ) located in the east and most new developments taking place in the west have resulted in weak transport links between the SEZ and the rest of the economy in the metropolitan area, including nearby suburbs like Motherwell (Mbambo, 2015). In theory, these metropolitan areas should provide the main source of lower-skilled workers. Additionally, in Port Elizabeth, there are challenges over revenue models for key services like water, electricity, and emergency services.

The above-mentioned implications of the current chasm between SEZs and cities denote that significant and urgent steps need to be undertaken to bridge the divide and fully understand the role of SEZs as levers for facilitating SUD. SUD cannot be holistically facilitated and equitably distributed in a fragmented context as there are bound to be losers and winners. This would be a reality that is against to the notion of SUD. Additionally, structural shifts are required in potential levers like SEZs, which could be used to facilitate SUD. This is integral for ensuring that the contribution towards SUD at city level is fully embedded as a key objective. Furthermore, there is an information and implementation gap in understanding how SEZs can contribute towards SUD. These gaps cut across various dimensions of SUD including governance, economic, social and environmental.

Against this background, the present study, which investigates the role of SEZs in facilitating SUD, is of critical importance for bridging the intersecting dynamics

between SEZs and SUD. Furthermore, this type of research is necessary for determining whether place-based policy interventions can serve as effective mechanism for advancing SUD outcomes. For this to occur, a look into the nature and functions of SEZs, the relationship between SEZs and hosting cities, as well as governance gaps and opportunities related to SEZ is needed. In conclusion, SUD is recognized as one of the most pressing contemporary challenges facing urban societies. Therefore, the continued establishment of SEZs within urban areas by governments across the world including South Africa suggests the need for coordinated and strategic efforts to reduce the disconnect between SEZs and hosting urban cities in order to enhance SUD outcomes

1.3. Purpose of the research

The purpose of this qualitative research study is to explore the role of SEZs in facilitating SUD within the context of the Tshwane Automotive SEZ (TASEZ). Evidence suggests that SEZs can be leveraged to support SUD (Farole & Sharp, 2017; Wessendorp et al., 2020). Yet, SEZs and urban areas remain largely divided across various dimensions in South Africa. This divide signals that very little consideration has been given towards the role of SEZs as levers for SUD. Therefore, there is a need to explore the drivers of the SEZ and city divide as well as the level at which industrial policy mechanisms like SEZs can be leveraged to support SUD. Investigating these factors is timely, firstly because SUD is regarded as one of biggest challenges that contemporary governments are facing globally, including in South Africa. Secondly, because South Africa has plans to designate more SEZs in future, some of which will be located in urban areas.

Following a case study research design, the study investigates the extent to which the nature and functions of SEZs enable SUD and additionally explores the relationship between SEZs and urban areas to understand the level at which this relationship can promote SUD. Furthermore, the study seeks to understand the SEZ-related policy gaps and opportunities with regards to SUD.

1.4. Research questions

Main research question:

- What is the role of the Tshwane Automotive SEZ in facilitating SUD?

Sub research questions:

- How do the nature and functions of SEZs enable SUD?
- What is the relationship between SEZs and cities, and does the relationship promote SUD?
- What are the SEZ policy and governance gaps and opportunities regarding SUD?

1.5. Study area: Tshwane Automotive SEZ

The TASEZ was launched in November 2019 in accordance with the SEZ Act (TASEZ, 2023). The TASEZ is registered as a private company in terms of the Companies Act No 71 of 2008 and is in the process of being listed as a Public Entity in terms of the Public Finance Management Act 1 of 1999 (PFMA) (TASEZ, 2023). It is governed by a Board of Directors consisting of representatives from the Gauteng Provincial Government (GPG), represented by the Gauteng Growth and Development Agency's subsidiary Automotive Industry Development Centre (AIDC), the City of Tshwane Metropolitan Municipality (CoT), the Department of Trade, Industry and Competition (**the dtic**[1]) and the Ford Motor Company of Southern Africa (FMCSA). GPG, CoT and **the dtic** are the funders and equal shareholders of the SEZ through a joint agreement while the FMCSA was the initial catalyst for the development.

The TASEZ vision is to be a benchmark for SEZs in South Africa while contributing to the growth of the automotive sector, with the objective of being a major creator of new businesses and a contributor to employment, transformation, and socio-economic development (TASEZ, 2020). The SEZ caters for automotive component manufacturing, logistics and distribution, light manufacturing and assembly, general manufacturing, and renewable energy (Gauteng COGTA, 2023). Once completed, the

[1] The Department of Trade, Industry and Competition branding guidelines denote that the abbreviated form of the organisations name be written in bold small letters, prefixed by the.

TASEZ will cover an area of 204 ha (TASEZ, 2023). Presently the SEZ is being developed in phases (see Figure 1). Phase 1 and Phase 1A was developed between 2020 and 2022 and is situated on 81.6 ha and 10.5 ha of land, respectively, while 45.9 ha land was set aside in Phase 1 for industrial use (TASEZ, Tshwane Automotive SEZ Annual Report 2021/2022, 2023). Phase 2 spans over 81 ha, with development having started in 2023 and being set to continue to the end of the same year. Lastly, Phase 3, once developed, will cover 42.2 ha of land.

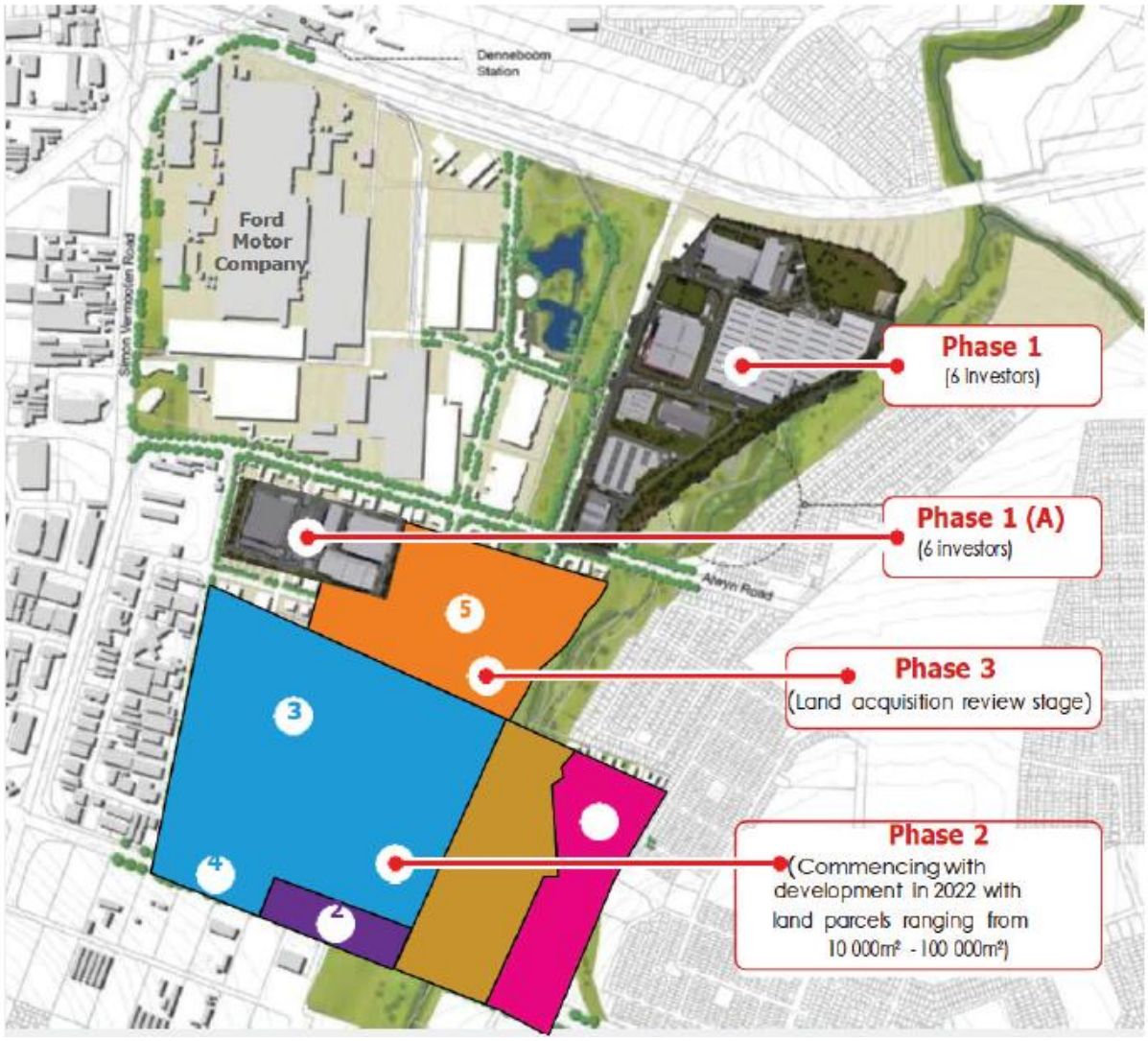


Figure 1: Tshwane Automotive Special Economic Zone (TASEZ) development phases (Gauteng COGTA, 2023).

To date, TASEZ has 12 investors, of which 10 are tenants already operating in the zone. As Ford is the anchor tenant for the SEZ, some of the other tenants are component suppliers to the company. The development of Phase 2 and 3 of the SEZ will see the creation of a mixed-use development that will include housing, retail, and

other amenities, strategically positioning the SEZ beyond its current focus on the automotive sector.

Spatially, the TASEZ is located within the CoT municipal boundaries, specifically Silverton (see Figure 2). Silverton is located in Pretoria East and falls under region 6. The TASEZ is boarded by residential neighbourhoods such as Eesterust, Mamelodi, Nellmapius, Faerie Glen and Lynnwood (TEDA, 2019). Furthermore, the SEZ site is 30 km from other automotive manufacturers including BMW, Nissan, TATA, and IVECO as well as the Rosslyn Automotive Supplier Park, which also forms part of the Gauteng northern corridor Tshwane Automotive City (TAC) development (TASEZ, 2020). TAC is a spatial and economic development concept that is anchored by significant automotive industry player/s and supported by transport and logistics infrastructure (Gauteng COGTA, 2023). This development is characterised by a geographical clustering of industries related to the automotive sector and is supported by anchor entities in the form of a major automobile or automotive parts manufacturer (Gauteng COGTA, 2023).

The SEZ was selected due the fact that it is an industrial policy mechanism with proximity to a major urban environment that has prioritised SUD. Additionally, the SEZ is developed close to existing townships and new post-apartheid low income housing areas however its relationships in so far as integration and effect on CoT's SUD remains to be assessed. TASEZ also represents one of the categories of spatial policies in the post-apartheid context as highlighted in Robbins (2024) taking from Todes & Turok (2018) which is about spatial rebalancing where the intent is to narrow the prosperity gap between regions and reduce unemployment in poorer areas through using state-directed investment. By virtue of its location and espoused policy objectives, this firmly places TASEZ at the centre of addressing spatial inequalities which is critical in the discourse of post-apartheid urban development and role of place-based policy instruments in driving SUD. Moreover, TASEZ is one of few SEZs designed around the inclusion of pre-existing large automotive assembly operations (Robbins, 2024). Due to this experience of embracing existing local industrial development, it would be interesting to understand how embracing of SUD are SEZs and their role in contributing towards SUD.



Figure 2: Tshwane Automotive Special Economic Zone (TASEZ) locality map in relation to City of Tshwane Metropolitan Municipality (CoT) surrounding neighbourhoods and townships (Google Earth, 2024).

1.6. Outline and structure of the report

Chapter 1 provides an overview of SEZs and outlines the relationship between SEZs and urban areas in view of SUD. The chapter also presents the problem statement, purpose of the research, research questions, study area and the delimitations of the research.

Chapter 2 presents the literature review conducted for the study. The chapter discusses the theoretical approaches underpinning SEZ development and examines the nature and typology of SEZs. As part of the chapter, a contextualisation of SEZs in South Africa was undertaken. This includes a discussion of the history (during and post-apartheid), nature, and significance of SEZs in South Africa and explores the challenges and opportunities of these SEZs. The chapter also discusses the concept of SUD and contextualises the implementation of the SUD concept within the South African landscape. Furthermore, the chapter examines the relationship between SEZs and SUD by understanding the role and contribution of SEZ to SUD as well as discussing the related challenges and opportunities. Finally, the chapter presents the conceptual framework that underpins and guides the research study.

Chapter 3 outlines the research strategy and methodology used for data collection, sampling and analysis. Furthermore, the chapter presents the adhered ethical considerations as part of conducting the research.

Chapter 4 presents the research results of the data collected from the primary and secondary sources. The chapter also provides an analysis of the research results.

Chapter 5 contains the discussion section of the research report provides a critical review of the research results and literature review within the frame of the research question.

Chapter 6 presents the conclusion and recommendations of the study.

1.7. Conclusion

In summary SEZs can be regarded as catalytic industrial policy instruments and are implemented for a variety of reasons by governments across the world. The number of SEZs being developed is growing annually and some of these will be located in urban areas. Yet, for many countries like South Africa, SEZs and urban areas remain largely disconnected in terms of policy, planning and governance. Given the global need for realising SUD, the current disconnect between SEZs and urban areas could undermine achievements towards SUD. Notably, the realisation of SUD requires the coordinated efforts and utilisation of a variety of levers including SEZs.

Within this context, the study investigates the role of SEZs in facilitating SUD through case study research of the TASEZ. Primary and secondary data were collected from purposely selected key informant and through a document analysis of context specific reports and policies. The knowledge collected in this study provides insight on whether the nature and functions of SEZs can enable SUD. Owing to the identification of SUD as one the biggest contemporary issues facing governments and the need for concerted efforts to increase the possibilities of realisation in SA cities, this study also explores the relationship between SEZs and cities and whether it promotes SUD. Lastly, this research also aims to understand the enabling environment related to SUD by investigating the SEZ policy and associated governance gaps and opportunities.

2. LITERATURE REVIEW

2.1. Introduction

The purpose of this section is to contextualise and investigate the research questions including the aims and objectives of this research within academic literature. This contextualisation is crucial for guiding the research as it offers insight on existing research, including gaps and misalignments. Additionally, a review of the literature enables the in-depth investigation of the research questions and objectives to critically assess emerging insights and themes. Moreover, the review reinforces the significance of the research and, in parallel, informs the conceptual framework that underpins the research, in extension the research design.

2.2. Theoretical approaches and conceptual frameworks to SEZ

The establishment of SEZs by governments is an integrative process that is influenced by a number of unique factors. According to research by Aggarwal (2010, 2011), ADB (2018), and Garriga (2020) there are three dominant schools of thought which explain the rationale of SEZs, namely, the neo-classical approach, neo-Marxist dependency theory and heterodox approach. Over time, the heterodox approach has been extended to include the provisions of more recent theories such as global value chains and agglomeration of industries (Aggarwal, 2011; Garriga, 2020). The three theories are described below.

2.2.1. Neo-classical (orthodox) theory

The **neo-classical (orthodox)** school of thought regarding SEZ development, endorses a trade centred approach where SEZs are viewed as enclaves that are developed to overcome anti-export bias in import substituting regimes (Aggarwal, 2017). To this end, SEZs are viewed as stimulative instruments for more complex economic and technological reforms aimed at advancing foreign capital and international trade, which would be impossible in the domestic economic environment (Aggarwal, 2011; Sosnovskikh, 2016).

The advantage of the neo-classical approach is that SEZs are developed with the objective of ensuring free trade, abundant labour supply, relaxation of labour standards, cheap factory sites and utilities, strategic locations near sea/airports, and

an investor-friendly custom regime (Aggarwal, 2017). The disadvantage of the neoclassical approach is that SEZs can be perceived to be welfare reducing due to liberal trade policies, poor labour conditions and limited spillover to the local economy (Aggarwal, 2017). Additionally, SEZs developed against this theory can be easily exploited for rent seeking purposes, and the cost for setting them up is higher than the associated benefit (Aggarwal, 2017; Warr, 1989).

Due to this, countries like Malaysia, the Philippines and Korea who developed SEZs in the 1970s based on neoclassical thinking have since extended liberal trade policies such as duty-free imports to firms producing for export located outside the SEZ (Warr, 1989). This proves that the development of expensive, special enclaves is not necessary for attracting foreign investments given that it can be applied to the ambient economic environment. In this light, Aggarwal (2011) argues that the neoclassical theory of SEZ development holds minimal significance in current contexts. The reason for this is that more countries are adopting trade and economic reforms in the rest of the economy in return SEZs are viewed as less of a vehicle for promoting economic liberalisation than the domestic economic environment.

2.2.2. Neo-Marxist dependency theory

Introduced by Andre Gundre Frank in 1966, the dependency theory is a neo-Marxist political and economic philosophy, that holds the notion that resources usually flow from a periphery of poor and underdeveloped states to a core of wealthy states (Limqueco & McFarlane, 1984). This ideology posits that the underdevelopment of periphery societies or states is a deliberate process of impoverishment through labour and resource exploitation by developed countries to advance their industrialisation (Umearokwu & Abimiku, 2023). The enrichment of the latter at the expense of the former is also furthered through other means such as multinational corporations, international commodity markets, foreign assistance as well as communications which enable advanced industrialised countries to represent their economic interest abroad (Hein, 1992). This creates an existence where the underdeveloped state is always tethered to the developed countries. In return, this makes it difficult for these states to

break ties with foreign goods and capital coming from the developed country in order to pursue internal growth.

However, the neo-Marxist dependency theory can be viewed as exaggerated and very pessimistic. As a start, it does not account for the country's political, social, cultural and environmental factors which might be contributing to the underdevelopment (Aggarwal, 2019). Secondly, due to the interconnected and globalised nature of economies, it is difficult for countries to fully disconnect with developed countries in order to pursue internal growth. Lastly, the experience of the Four Asian Tigers East Tigers (Taiwan, South Korea, Hong Kong, and Singapore) challenges the thinking advanced by dependency theorist given that a considerable level of industrialization despite starting as peripheral regions, was achieved in these countries (Umearokwu & Abimiku, 2023).

In relation to SEZ, the neo-Marxist dependency theory is embodied in a couple of ways. Firstly, the co-location of multinational corporations (MNCs) in the SEZs of periphery state is pursued in order to exploit differences in location costs, repatriate profits made and export raw materials for processing in developed countries (Hein, 1992). Secondly, SEZs are developed with the basic motivation of being labour hubs for cheap labour with low labour standards (Aggarwal, 2017). Therefore, for neo-Marxists, SEZs are viewed simply as labour institutions and as world factories (Garriga, 2020). Thirdly, SEZs in developing countries are fashioned to be vessels for low-wage assembly line work, which is the least sophisticated segment of the production process, while the research and management systems are controlled by developed countries (Baissac, 2011). To this end, the SEZs attract very little FDI and perform poorly towards information and technology transfers to the domestic economy (Aggarwal, 2023).

Aggarwal (2011) challenges the above by stating that the neo-Marxist theory when it comes to SEZ does not account for three main factors. As a start the theory doesn't consider that the relocation of MNC to developing countries extends beyond the reason of accessing cheap labour and could include expansion of markets. Secondly, zones evolve and move to services beyond manufacturing-based activities and lastly

offshore outsourcing has opened new opportunities for domestic producers to participate in global product markets (Aggarwal, 2011).

From the above, the neo-Marxist dependency theory may be applicable for rationalising the development of SEZs for specific regions of the world. However, its ability to generalise by denoting all SEZs are constructs of dependency is lacking and doesn't reflect the evolutionary and developmental nature of periphery states.

2.2.3. Heterodox approach

The **heterodox approach** is founded on endogenous growth models as well as new institutional and development-state theories developed in the 1980s (Zia et al., 2017). The approach supposes that the sustainable growth of the domestic economy is predicated on a mixture of state-market interactions, where the government plays a significant role in acquiring investment, acquiring technology, developing human capital, establishing institutions and pursuing institutional reforms (Ackahet al., 2024). According to this approach, local companies do not possess sufficient marketing, technical or managerial capacity, and rarely have access to international markets and distribution channels (Sosnovskikh, 2016). To this end certain levers and instruments like SEZ need to be created by government in order grow these capacities.

Under the heterodox approach, SEZs fill the gaps in technical, marketing and managerial know-how of domestic firms by attracting foreign investors (Aggarwal, 2017). In return, the presence of foreign investors generates important spillovers through demonstration effects, on-the-job training as well as learning by doing and copying, and contributes to the diffusion of technology and knowledge (Zia et al., 2017). In view of this, SEZs assume a more catalytic role in promoting broader economic growth by virtue of the dynamic spillover effects, which extend beyond their enclaves (Warr & Menon, 2016). Particular examples of this include China, Republic of Korea, Singapore and in Dubai zones programs consider as a crucial tool of national or regional economic and industrial development program and they are supported at the very top level of the government (Pidorycheva, 2017).

Although the heterodox approach has dominated much of the work on SEZs since the late 1980s, it is not without shortcomings. Specifically, the approach fails to acknowledge the successes of domestic investment firms by focusing on the catalytic role of FDI in realising benefits. (Aggarwal, 2011) To this end, the role of domestic investment is passive, as its participation is considered important merely for spillovers and learning. Additionally, there is no guarantee that the investments in SEZs will yield desired domestic growth. Numerous states supported SEZs in African, Latin American, East Asian as well as eastern European counties like Ukraine have been unsuccessful in creating the backward linkages which stimulate the domestic economy (Pidorycheva, 2017).

Emerging from the heterodox approach has been more recent theories such as global value chains and agglomeration of industries as discussed below:

2.2.3.1. The global value chain approach

The concept of Global Value Chain (GVC) refers to international production sharing, a practise where production is broken into activities and tasks that are carried out in different countries (Seric & Tong, 2019). According to Benito et al. (2019), GVC provides the conceptual framework to describe, understand, and manage the increasingly disaggregated and geographically dispersed value chains of MNCs.

Under this theory, SEZs can be regarded as mediums for facilitating the host country's integration into GVC through both off-shoring and offshore-outsourcing (Aggarwal, 2010). Offshore-outsourcing is associated with sub-contracting parts/ the entire production process to specialized firms located abroad, while offshoring is the shift of production to a new location in another country through affiliates (FDI) (Aggarwal, 2010). Offshoring and outsourcing of activities respond to the need for reduced costs of doing business and creates a healthy and competitive business environment (Masinga, 2022). To this end, SEZs are introduced as deliberate policy tools to foster a favourable investment climate for foreign investors with regards to improved infrastructure, incentives, and harmonised regulations while opening up opportunities for domestic producers. For example, East Asian SEZs facilitated the participation of Asian countries in GVCs by first being assembly points for MNC (to increase local

production) to designing products under the brands of other firms, and to selling their own branded merchandise in internal and external markets (Aggarwal, 2010).

2.2.3.2. The Agglomeration of Industries Approach

Borrowing from Krugman (1991), Zeng (2022) explains that agglomeration theory describes a phenomenon whereby firms co-locate and geographically densify to form clusters of economic activities and incur lower production costs. In the context of the agglomeration theory, SEZs are viewed as catalytic sites for promoting agglomeration economies or clustered economic activity (ADB, 2018).

According to Li et al. (2021) SEZs can promote and strengthen the formation of industrial clusters and facilitate economy-of-scale enterprises within the zone to reduce the cost of obtaining resources. Additionally, SEZs can improve enterprises' productivity through labour pooling effects as well as knowledge and technology spillover effects (Zeng, 2022). Therefore, clustered economic activity within or around SEZs can enhance productivity and spur innovation for firms by bringing together technology, information, specialized talent, competing companies, supporting companies, academic institutions, and other organizations into a concentrated geographic scope (Aggarwal, 2010).

Notably the success of clusters depends on five sets of factors: firms structure, strategy and rivalry, demand conditions, factor conditions and supporting industries. Additionally, the more mature the interaction of these factors, the greater is productivity enhancing effects of clusters. Although the use of clustering may yield production benefits, the increase in competition may lead to barriers to entry for new role players in the market (Masinga, 2022). To this end, the implementation of clusters requires strong coordination amongst different stakeholders from both the public and the private sector.

2.3. Understanding the nature, typology and evolution of SEZs

The first operational SEZ documented was the Shannon Free Zone in Shannon, Ireland. Established in 1959 with the dual purpose of promoting employment in the rural area of Shannon and capitalising on the small regional airport to boost the Irish economy, the SEZ has since its establishment become a formidable site of socio-

economic activity (Scheepers, 2012). Over time the site has attracted over 100 companies, employs over 7000 people and has generated over 3.5 billion US dollars, reinforcing the notion of SEZs as a stimulus for socio-economic development (Bojanić & Lulić, 2011).

Since the establishment of the Shannon Free Zone, SEZs have undergone several modifications (Bost, 2019). Additionally, SEZs have become increasingly widespread and have gained increased popularity over the last two decades (Rodríguez-Pose et al., 2022). To date, there are approximately 5400 SEZs globally, with more projected in the future (Aggarwal, 2019). Furthermore, SEZs have evolved in terms of scope and principles of functioning with some SEZs assuming different forms and names in response to geographic contexts and needs (Ślusarczyk & Grondys, 2018). This evolution suggests that the conventional archetype of SEZs has also changed throughout the years to accommodate emergent nuances in SEZ types. Therefore, the essential nature and existence of SEZs cannot be unidirectionally deduced as it is an intricate process requiring the comprehensive appreciation of all relevant factors and theoretical foundations. Within this context, the following sub-sections of the literature review seek to investigate the nature, typology and evolution of SEZs. Additionally, a sub-section which presents a critical analysis of the successes, failures and sustainability of SEZs is presented.

2.3.1. Examining the nature of SEZs by definition

Special economic zones are subjects that have been intensely studied and as a result, several definitions exist in the literature. For example, Rodríguez-Pose et al. (2022) states that SEZs are geographically delimited areas where governments promote industrial activity through both fiscal and non-fiscal incentives, infrastructure provision and improved services. Author Quinn Slobodian describes zones as an enclave carved out of a nation and freed from ordinary forms of regulation, which could range from simple tax-free zones to full abdication of national sovereignty over a portion of land (Gordon, 2023). To this end they can be viewed as quasi-extraterritorial entities, both of the host state and distinct from it (Slobodian, 2024).

April (2016) describes SEZs as purposely established sites for achieving one or a combination of policy objectives such as attracting foreign direct investment, serving as pressure valves for alleviating large scale unemployment and supporting domestic economic reform. In a different light, Hazakis (2014) argues that SEZs are administratively defined territories, influencing interactions and competitive/co-operative behaviour of economic agents through dynamic and interrelated cognitive, normative, regulative and organizational structures, routines, incentives and processes.

The definitions discussed above bring to light a number of factors regarding the nature of SEZs. Firstly, the definitions collectively underscore the notion that SEZs are purposefully designated sites, meaning their establishment is not a random exercise. In Cambodia, the location of SEZs is not left to chance, many are located in geographic areas and routes conducive to international trade. For example, the Banteay Meanchey located on the boarder of Thailand, hosts three SEZs, which are specialized in export processing and assembly for the Thai market (Brussevich, 2024).

Secondly, SEZ need to be enabled through infrastructure investments, fiscal incentives and organisational structures (Song et al., 2024). This is commonly witnessed in many SEZs established across the world. In South Africa specifically, **the dtic** during the 2013 financial year spent R6,000m (US $450m) on the country's Industrial Development Zone (IDZ) programme for infrastructure, export invectives among other cost (Todes & Turok, 2018). In India, the case of the Andhra Pradesh SEZ a mega-project alone, resulted in the estimated fiscal implication of US$400 million during its initial stages, for costs linked to acquisition of the land, connecting the site to roads, power, water, and waste facilities, as well as the creation of designated plots for manufacturing and housing (Alkon, 2018).

Thirdly, SEZs allow governments to deploy specific mechanisms and espouse targeted objectives. These can include the utilisation of SEZs for supporting employment creation in manufacturing sectors, attraction of foreign investment, economic diversification and industrialisation. By 2019, SEZs in Cambodia had employed more than 131,000 Cambodians (of which 64% were women), this accounted for over 22 per cent of formal employment (Brussevich, 2024). Song et al.

(2024) notes that SEZs can be used to stimulate urbanisation within the Tibetan Plateau by examining three SEZs. The study's findings provide valuable lessons for countries like India and Africa that are experiencing similar or markedly different modes of urbanization, transitioning from enclave-style export processing zones to more integrated townships.

Although minimally represented in the definitions, is also the element that SEZs be designated within a national legislative process culminating in the development of a national policy or legal environment for SEZs. This means that SEZs are policy-defined industrial instruments. Zeng (2021a) explains that the rationale for the legislative establishment of SEZs is to introduce or pilot, within a confined setting, the legal and regulatory reforms conducive for the efficient operation of businesses in the domestic economy. In conjunction, this allows for the overcoming of both hard and soft constraints to the business operating environment for the country.

Despite numerous definitions, no universally agreed-upon definition of SEZs exits (Schweinberger, 2003). This is due to the fact that there are a several dimensions that need to be considered in defining SEZs, leading to varied interpretations based on author preference. In addition, owing to the fact that SEZs emerge in view of a nationally established process, each country may define and understand SEZs differently and therefore, the underpinnings of definitions are influenced by national perceptions (Aggarwal, 2019). To this end, arriving at a universal definition becomes complex. This complexity provides an impetus to rather understand the essence of SEZs in terms of characteristics (illustrated in Table 1) as described in the following section.

2.3.2. The typology and evolution of SEZs

SEZs are dynamic economic development instruments that exist in a variety of forms. In the book Crack-Up Capitalism: Market Radicals and the Dream of a World without Democracy, author Quin Slobodian notes that the evolution and emergence of SEZ is the result of succession following several transitions periods in the world, including decolonisation and states seeking more autonomy, and national independence

(Gordon, 2023). According to Quin Slobodian as mentioned by Li (2024) SEZs emerged as an antithesis to the ongoing global economic governance which was characterised by institutional arrangements which aimed to bind nations in order to prevent or ensure certain economic outcomes as part of fostering global interdependence. Instead, the SEZs, evolved as sub-national geographical jurisdictions to facilitate mobile global investment and trade within sovereign states without binding newly sovereign states macro/global economic institutions and governance systems (Slobodian, 2024).

Zones have evolved from the traditional enclave model to more modern forms that are integrated within urban development (Farole & Akinci, 2011). According to Chen (2019), Zeng (2021b) and Tan et al. (2020), SEZs have evolved over five generations with each generation characterised by distinct forms of SEZs (Table 1). The evolution of SEZs across these generations addresses several factors about the typology of SEZ. To begin with, the term SEZs is used generically to accommodate different variations and forms of SEZs across the different generations. Pidorycheva (2017) considers this crucial as it enables the to inclusion of a wide variety of past, present, and future zones.

Secondly, SEZs assume different forms and names to create distinctions in terms of offerings, functions and targeted investors, thus moving beyond the superficial differentiation of zones by national terminology. According to Chen et al. (2022) to meet specific needs, China has implemented different forms of SEZs namely, Economic and Technological Development Zones (ETDZs), simple Development Zones at both national and provincial levels, Free Trade Zones, Export- Processing Zones (EPZs) and High-tech Industrial Development Zones.

Thirdly, the generations that characterise SEZ evolution are not distinct epochs in the traditional sense, which are rigidly represented through defined timelines, but rather are markers that demonstrate the dynamism of SEZs over time. As a result, each generation has woven in features of other generations. This suggests that the evolution of SEZs is not a static process confined to specific timeframes, but rather it is a fluid process, which is determined by context, objectives and innovative ability of the specific country.

Table 1: Overview of five generations of Special Economic Zones (SEZs) and related identifiable characteristics of each generation.

SEZ Generation	Characteristics	Examples
First generation of SEZs - Economic Zones 1.0	Existing from the late 1970s; were mostly in the form of Export Processing Zones and established with the objective of attracting FDI, promoting exports and earning foreign exchange (Zeng, 2021b).	Shannon Free Zone (Ireland), Masan Free Export, Zone (Republic of Korea)
Second generation of SEZs - Economic Zones 2.0	Extended from Economic Zones 1.0; were established to be wider in size with linkages to the local economy and multifunctional in nature as well as less dependent on incentives (Ahmed et al., 2020).	Suez Canal SEZ in Egypt, established in 2015. Some countries like China established wide area SEZs by declaring cities or provinces as SEZs (Zeng, 2021b).
Third generation of SEZs - Economic Zones 3.0	Synthesizes the experience of Zones 1.0 and 2.0 with a view to integrate environmentally sustainable green growth with investor-friendly policies, legal and institutional frameworks, amenities and foster linkages with broader communities (Ahmed et al., 2020). Includes Eco-Industrial Parks or Green Zone SEZs (Grant et al., 2020).	Atlantis GreenTech Special Economic Zone (South Africa) Kalundborg Eco-Industrial Park (Denmark)
Fourth generation of SEZs - Economic Zones 4.0	SEZs focus on higher value-added service sectors (finance, trade services) and practice relaxed restrictions in terms of laws and regulations on foreign as well as domestic companies (Zeng, 2021b).	Types of SEZs that are identified within this generation include free service zones and free trade zones (Bost, 2019). Shanghai Pilot Free Trade Zone (China)
Fifth generation of SEZs - Economic Zones 5.0	Support the embedding of digital technologies in production and services, and industrial and business activities are fully integrated with urban and eco-development concepts (Zeng, 2021b). The aim of fifth generation SEZs is to develop future intelligent cities rather than zones.	Includes cross-border e-commerce (CBEC) pilot zones (Cities)' and science parks (Zeng, 2021b). Malaysian Digital Foreign Trade Zone

2.3.3. Success, challenges and sustainability of SEZs

The implementation of SEZs programmes across the world is characterised by a dual reality of successes and challenges. There are cases of considerable successes at the same time challenges. This then begs the question what makes SEZs successful in other areas and what makes them fail? Overlayed on this dual existence is the question on the sustainability of SEZs which encompasses the relevance and enduring nature of SEZs as placed based policy instruments to stimulate economic development in one hand. On the other hand, in the age of green economic development, can SEZs transition to be areas that embody sustainable industrialisation.

The success of SEZs hinges on several factors. Aggarwal (2019) identifies the institutionalisation of zones particularly the SEZ policy into the domestic policy and planning. Still on governance related elements as a success measure for SEZs, Aggarwal (2023) notes good governance as assessed against regulatory quality, government effectiveness, rule of law, absence of corruption, voice and accountability and political stability is paramount for SEZ success. In Bangladesh, despite the exemption of SEZs to several national acts, there is little evidence of administrative simplification, institutional efficiency or lower corruption levels in zones (Dutta & Gupta, 2014). This entails that SEZ firms have no edge over the wider economy thus red tape challenges are equally experienced even in the zone.

Extracting from Lu, Wang, and Zhu (2015), Alkon (2018) states that a key success factor for an SEZ programme is spillover effects to the domestic economy exemplified though employment, manufacturing and production outputs, capital flows, and the overall growth in the number of firms. Wang (2013) notes that SEZ programmes can be deemed successful if they show that SEZ can create, agglomeration economies, increase wages, and attract more FDI to the domestic region. Warr and Menon (2016) found that in Cambodia, SEZs have attracted significant levels of foreign investment into the country, created around 68,000 jobs, with equal or better pay and prospects than the alternatives that would otherwise have existed. According to Bergantino et al. (2025) in Italy, the introduction of SEZs in Puglia has led to an increase of more than 10% on average in the turnover of transport sector companies. These results from

both Cambodia and Italy highlight the significance of industrial policy in driving socio-economic development. In Italy particularly the successes of SEZs have provided impetus for the creation of a unified SEZ for the South of Italy which will allow for fiscal and administrative benefits to be accessible to all companies in the Southern Regions (Bergantino et al., 2025).

As mentioned earlier, against the celebrated successes of SEZs lies the areas of blight of SEZ programmes. These areas undermine the progressive socio-economic elements espoused in SEZ programmes. According Hardaker (2025) some of the negative outcomes that have been discussed about SEZs among other things, include offering of largely low-quality low paid jobs, forced displacement of local communities within SEZ designated regions and pollution in SEZs areas. The discussion of these outcomes is not without examples. For instance, in the late 1970s and early 1980s, wages in Bataan EPZ in the Philippines and Masan EPZ in South Korea were lower for those workers than those in the domestic environment conducting comparable work (Murayama & Yokota, 2009). Linked to the labour issues in economic zones has been poor labour practices and treatment of worker particularly women. A study in 2006 in Zone Franche firms of Madagascar one of Africa's successful cases of SEZ programme implementation found that the hours of work for women in were long and turnover was high raising questions on whether SEZs could be a source of long term employment for women (Glicka & Roubaud, 2006).

Additional negative outcomes or challenges as a result of setting up SEZs include heavy fiscal burdens which are often difficult to recuperate and are sometimes double the anticipated capital flows from the spillover effect and FDI of the SEZ (Neveling, 2024). A study on the Noida SEZ in India revealed that the total cost of the SEZ was Rs.2.8 billion while the anticipated total benefits were Rs.1.28 billion raising alarm on the financial viability of the SEZ project (Bishnoi, 2021).

SEZ programmes can also be vessels for patronage and rent seeking. Aggarwal (2023) in a study covering the investment climate of zones in Bangladesh, India and Pakistan, recorded that firms showed a significant higher average corruption related payoffs than matched firms outside zone. There is also the view the spillovers triggered by SEZ firms into the domestic economy are not necessarily targeted

towards moving the country's economy to tertiary economic participation such as services sector. Aggarwal, (2019) explains that most production at the high end is dominated by foreign multinationals, while low-end activities are performed by local companies.

Brussevich (2024) also levels the criticism that SEZ activity widens the gap between urban areas and remote less developed areas. This is because SEZ in countries like Cambodia are established and predominantly concentrated in areas with better access to infrastructure and transportation networks as a result. Additionally in most cases the trickle effect of SEZs is felt until a certain radius to this end those rural areas that are far from the SEZ hardly ever experience the developmental benefits of SEZ.

The establishment of SEZs is synonymous with environmental degradation and habitat destruction. The rise of sustainable industrialisation and cleaner production have put a spotlight on the contribution of SEZs towards sustainability. There is a significant opportunity for SEZ to contribute towards sustainability by adopting Eco-Industrial Parks practices and principles. An EIP can broadly be defined as 'a dedicated area for industrial use at a suitable site that ensures sustainability through the integration of social, economic, and environmental quality aspects into its siting, planning, management and operations. It has increasingly been recognized as an effective tool for overcoming challenges related to inclusive and sustainable industrial development within the scope of Sustainable Development Goals. On the other hand, it is used to respond to global demands for a green supply chain and reduction in resource constraints through improved resource management and conservation while ensuring that national and international climate change commitments are met.

The above discussion strongly highlights that SEZs despite their challenges, they hold relevance as place-based tools for regional economic development. Emphasis on this was made by Frick and Rodríguez-Pose (2023) on a study capturing drivers of investment in SEZs in developing countries, wherein mention is made that SEZ can be a valuable tool for influencing firms' international investment decisions. Notably, SEZs are not a silver bullet for regional economic development. As a result, SEZ policies will not work in every context nor will copying other countries' experiences guarantee success. Therefore, in addition to supporting the implementation of SEZs,

the state should form a common enabling environment for business that extends beyond spatial boundaries of SEZs and spread benefits to the economy as a whole (Pidorycheva, 2017) .

2.4. Contextualisation of SEZs in South Africa

2.4.1. History and nature of SEZs in South Africa

The history of SEZs in South Africa can be traced back to the mid-1990's shortly after the end of post-apartheid when the government needed to foster sustainable development in areas where poverty and unemployment were at their highest. In recognition of this, the Spatial Development Initiative (SDIs) programme was launched by the national Departments of Transport and Trade and Industry in 1996/7 (Pillay, 2004). Prior to the SDI during the apartheid regime were Industrial (growth) Development Points and Deconcentration Points (Nel, 1994) as seen in Figure 3. Interestingly they were established through the Regional Industrial Development Strategy on the fringes of metropoles and in former homelands also with the aim of devolving growth from the urban core, similarly to existing SEZs.

As part of the SDI programme a range of country-wide initiatives were launched which focused on industrial, agro-tourism and sectoral-mix interventions. Additionally, some initiatives found development expression either as an SDI corridor development or an industrial development Zone (IDZ). Established from the 2000s, IDZ were an initiative designed to reposition South Africa within the global economy. The intention was to attract foreign direct investment and export of value-added commodities in order to accelerate growth, employment and inclusion (Nel & Rogerson, 2014). IDZs were an initiative of the President Mbeki administrative era aligned to the post-apartheid market orientated macroeconomic policy, growth, employment and redistribution (GEAR) of the period that was adopted in 1996.

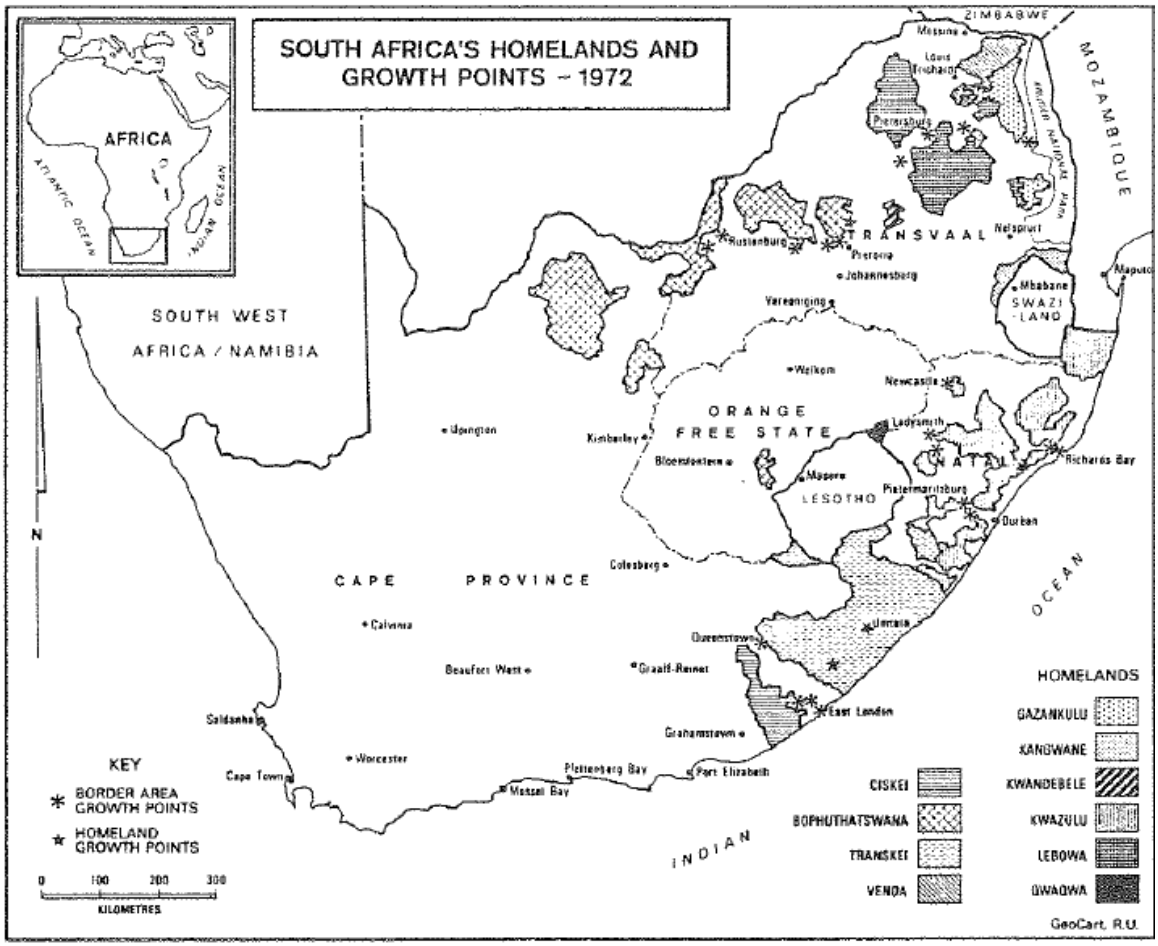


Figure 3: South Africa's homelands and growth points, 1972 (Nel, 1994)

Despite the significance of the IDZ programme, it experienced numerous challenges, which led to lacklustre outcomes (Rogerson & Nel, 2016). These included inadequacies in financial resources, poor unique value proposition, negative economic growth, and poor realisation of the preferential conditions and benefits for investors (Qumba, 2022). These challenges provided the impetus for South Africa to transition towards SEZs with regards to locally based economic agglomeration.

SEZs came into effect in 2014 and are promulgated under the SEZ Act 16 of 2014. Chapter 2 of the Act outlines a manifold of objectives for establishing SEZs. The main objective is that SEZs act as economic development tools to promote national economic growth and export by using support measures to attract targeted foreign and domestic investments and technology. This entails that SEZs are seen as a vehicle for generating employment opportunities, promoting export-oriented growth,

expanding the manufacturing sector, up-scaling trade and creating additional industrial hubs within the country (Qumba, 2023).

The SEZs Act defines an SEZ as a geographically designated area within the country set aside for specifically targeted economic activities, which are then supported through special arrangements (which may include laws) and support systems to promote industrial development. According to Qumba, (2023) the above definition brings to the surface the following key distinguishing markers that characterise SEZs: firstly, SEZs must be in a delineated geographic area; secondly, SEZs have specific targeted economic activities that may not necessarily be available to the domestic market and other areas of the country's economy; thirdly, SEZs have a designated regulatory environment and other non-specified special arrangements that are conducive to domestic and foreign direct investment; and lastly, SEZs have other support systems to promote industrial development.

The SEZ Act allows for the creation of four different categories of SEZs in South Africa including, a free port, free trade zones, an industrial development zone, and a sector development zone that focuses on the development of a specific sector or industry through the facilitation of general or specific industrial infrastructure, incentives, as well as technical and business services primarily for the export market.

2.4.2. Significance of SEZs in South Africa

SEZs in South Africa hold significance for a variety of reasons that can be grouped into two domains, namely economic and social importance. On the economic front, Nel and Rogerson (2014) recount that SEZs are critical industrial policy interventions to help address the country's challenge of persistent 'uneven' economic development. Additionally, SEZs are key instruments in South Africa's re-industrialization as encapsulated in the county's economic policy (Rogerson & Nel, 2016). Sishi (2021) adds to the discussion of the economic significance of SEZ by highlighting that SEZs in South Africa are critical for attracting FDI including local economic development.

Regarding social significance, Altbeker et al. (2021) argue that, despite latent growth, SEZs in South Africa offer an opportunity to create labour-intensive manufacturing

activities that can absorb unskilled and inexperienced workers, resulting in an inclusive, employment-intensive economy. This opportunity is critical for the country, given the soaring unemployment levels. In the same vein, Sishi (2021) identifies that SEZs are critical for catalysing and nurturing skills development by promoting local enterprise supplier development. This development suggests that SEZs in South Africa present an opportunity to promote inclusive industrial development.

Curiously, little is mentioned regarding the role of SEZs in contributing towards the sustainable development of urban areas or hosting municipalities. In addition, no information exists regarding the role and significance of the country's SEZs regarding the promotion of eco-industrial development. Establishing a clear pathway on this issue is significant given that South Africa has committed to transition towards a lower carbon economy. The silence levelled against these factors points towards poor linkages between SEZs and hosting urban areas and inertia with the establishment of SEZs as green economic engines.

2.4.3. Challenges and opportunities for SEZs in South Africa

The utilisation of SEZs in South Africa has been filled with both highs and lows. Chauke (2022) argues that there have been successes with the performance of designated SEZs, with the number of investors operating in designated zones increasing from 110 to 122 in the first quarters of the 2018/19 and 2019/20 financial years. In addition, Chauke (2022) asserts that investment values within SEZs have increased and similarly, the number of direct jobs including the number of signed but non-operational investors is projected to be almost 61, with a R 33.64 billion investment value. This finding suggests that there is interest from investors to operate within South Africa's SEZs.

In contrast with assessments by Chauke (2022), Boniface (2015) argues that SEZs in South Africa have been unable to attract significant investments, increase employment opportunities or drive export led economic growth and development.

In the case of the Coega SEZ, Chongsheng (2024) found that the SEZs struggled with creating sustainable job creation as most of the low entry jobs are temporary or short-

term ones. Furthermore, gleaning from Lisa Thompsons research, Chongsheng (2024) notes that employment skills training provided by the Zone authorities does not cover the needs of all jobs in the Zone, as a result some companies have to provide their own training.

Altbeker et al. (2021) corroborate Boniface's view with the observation that SEZs in South Africa have had little influence in driving meaningful economic transformation through industrialisation and overcoming market failures. The insights expressed by Boniface (2015) and Altbeker (2021) point towards the challenges that SEZs in South Africa are experiencing, which include the disconnect between efforts invested versus return on investment. A lingering question is then that if SEZs are struggling to fully realise their inherent objectives, is there scope for SEZs to be utilised as drivers for additional public policy ambitions such as SUD or green economic development?

Houghton (2016) argues that, in addition to their current scope, there are opportunities for South Africa's SEZs to be utilised in response for a variety of issues, which could include leveraging the catalytic impacts of the SEZ intervention on the functional economic region within and well beyond the city boundaries. Essentially, utilising SEZs as catalysts for within and beyond city based economic corridors. Within this context, Black and Yang (2021) note that there is an opportunity for SEZs to function as hubs for growth sectors such as clean energy and technology, something that the Atlantis SEZ in South Africa is pioneering.

The discussions covered in this sub-section of the report bring to the surface the achievements, challenges, and opportunities of SEZs in South Africa. Implicit in the discussion is the acknowledgement that SEZs hold significance across a variety of levels including nationally, provincially and locally and, as a result, any future position or role for SEZs should consider the multi-level importance of SEZ.

2.5. Understanding sustainable urban development

2.5.1. Defining the concept of SUD

The concept of SUD has existed for a considerably long period due to a growing need in the 1980s to adopt environmentally sustainable behaviours. As a result, the origins

of SUD can be attributed to key historic events which include the Brundtland report originally published in 1987 and the Rio declaration signed in 1992 (Tang & Lee, 2016). Additionally, Yigitcanlar and Teriman (2015) argue that the imperative for SUD gained prominence through a number of debates and successive events, which emphasised the need to develop a common consensus to protect the environment from the excessive ecological destruction of unregulated economic growth and conspicuous consumption in cities. Despite existing over a long time, no universally agreed-upon interpretation of the concept exits.

The earliest popular definition of SUD was provided by Peter Hall in 1993, which identified SUD as a form of development that guarantees the continuing development potential of cities and urban populations in future generations, and indeed the continuing potential of the planet in which they lie (Mukoko, 1996). This definition was followed by Wheeler's definition in 1996 that stated that SUD was development that improves the long-term social and ecological health of cities and towns. Similarly, both acknowledge that cities will continue to develop, however such development should occur in a manner that does not compromise the natural environment or prospects of future generations. Since then, other definitions have emerged and there has been considerable evolution in the understanding SUD.

Tang and Lee (2016) define SUD as "the capacity of any significant human settlement to maintain environmental quality and carrying capacity, to support socio-economic development and management, and to provide sufficient services and livelihoods to all current and future inhabitants". Bera (2020) describes SUD as the achievement of a balance between the development of urban spaces, protection of the environment and equity in employment, shelter, basic services and transportation in urban areas. In a similar pattern, Rasoolimanesh et al. (2011) and Michalina et al. (2021) state that SUD describes the symbiotic relationship between the environmental, social, economic, and governance dimensions in respective cities.

Based on the above definitions it is evident that SUD is a multi-layered concept that covers various fields of activity. To this end, SUD offers urban areas an opportunity to address the myriad of challenges they are confronted with through a cohesive model. This is fundamental as it ensures that all features of the urban landscape are optimally

and accurately positioned to contribute towards the sustainable development path of urban areas (Ahmadi & Toghyani, 2011).

2.5.2. Dimensions of sustainable urban development

SUD can be characterised by four pillars, namely economic, social, environmental and lastly, institutional or governance (Michalina et al., 2021). The aim of this section is to provide an introductory discussion of these pillars.

Mukoko (1996) and Ahmadi and Toghyani (2011) argue that the economic pillar of SUD refers to the ability of the city to remain competitive, to respond to changing technological and production patterns, protect its job base and provide affordable housing while reducing per capita costs of urban services and protecting the economic efficiency of city administration see Figure 3.

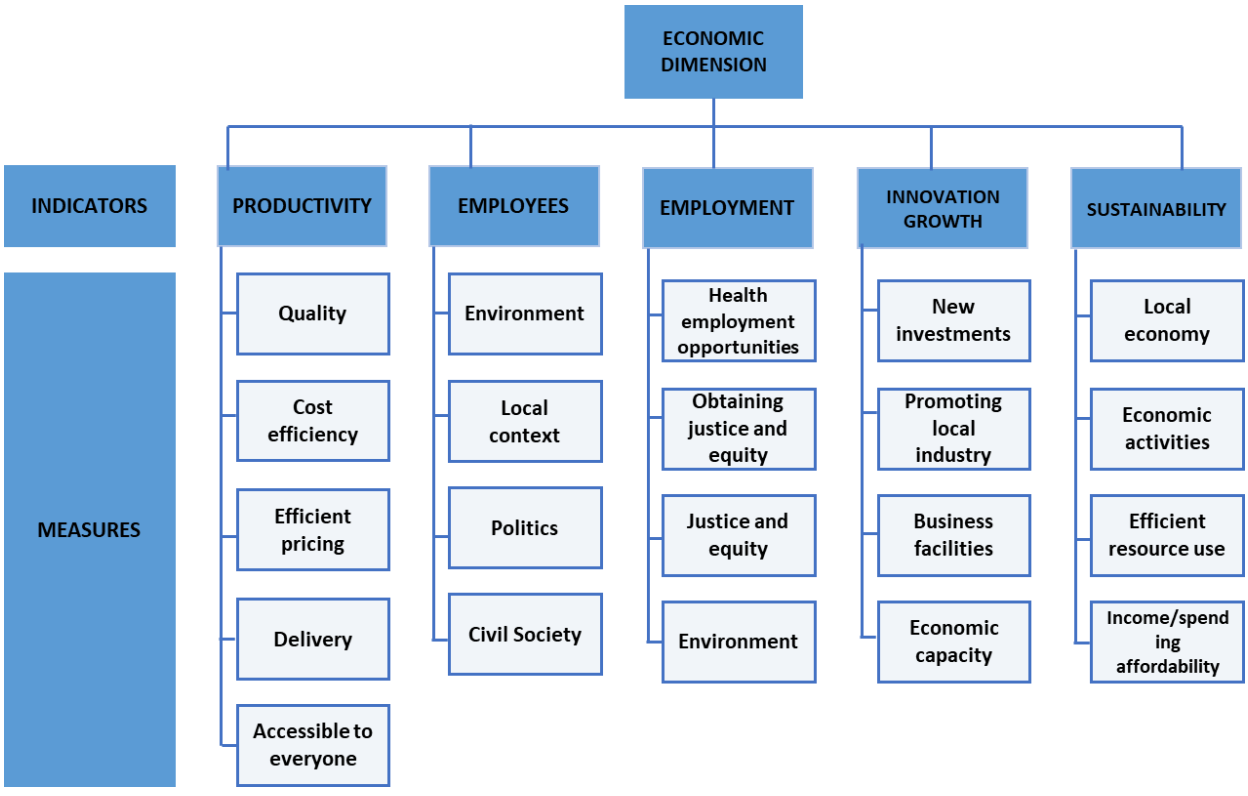


Figure 4: Economic dimension of SUD indicators and measures (Bhargava et al., 2020).

The social dimension of SUD considers the integrative and inclusive nature of the urban space, the liveability of the city (Mukoko, 1996) and extends to the well-being

and quality of life provided by the city. The measures and indicators for the economic dimension are detailed in Figure 4 below.

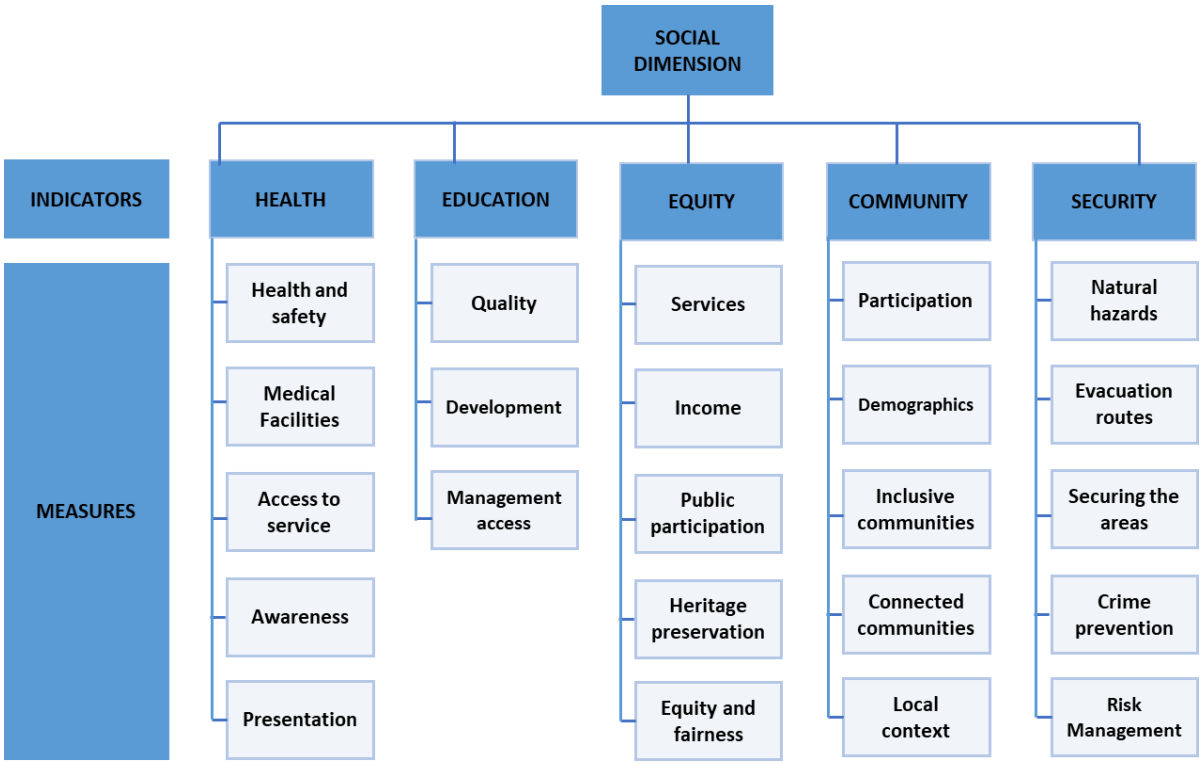


Figure 5: Social dimension of SUD measures and indicators (Bhargava et al., 2020).

The environmental dimension of SUD is concerned with land use, pollution, eco-system integrity, carrying capacity, and biodiversity, see Figure 5.

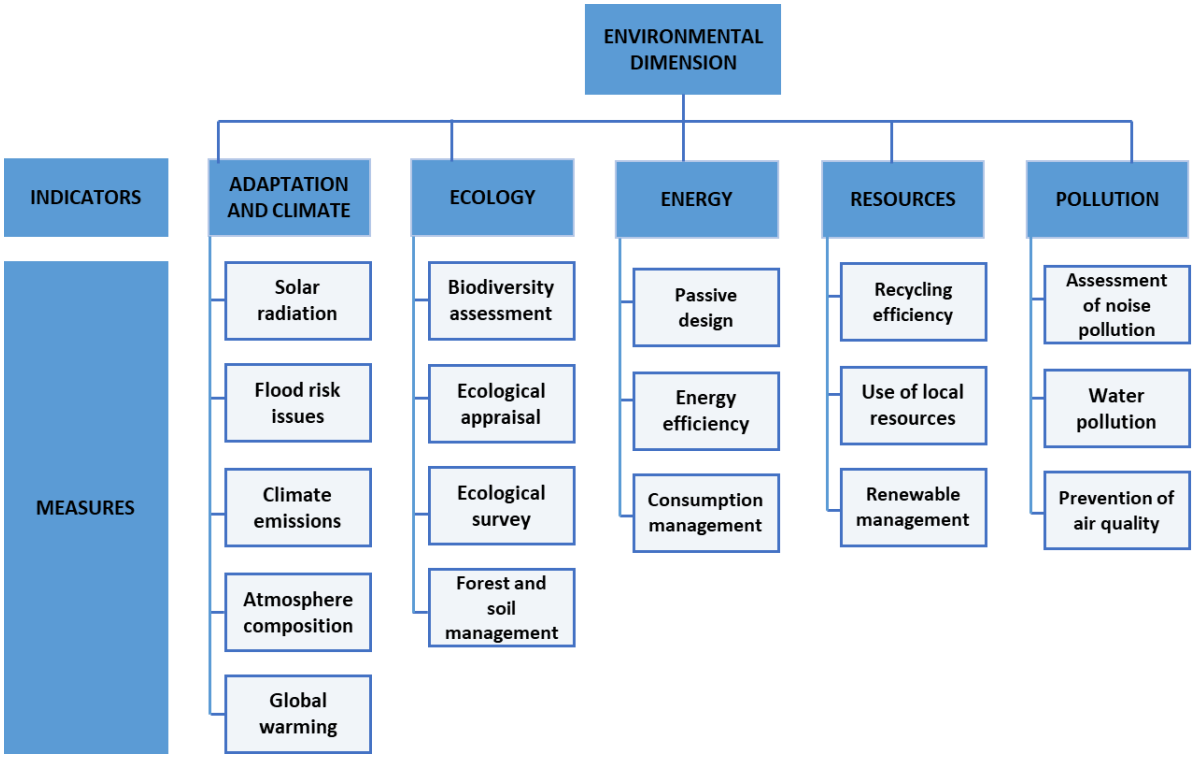


Figure 6: Environmental dimension of SUD measures and indicators (Bhargava et al., 2020).

Urban governance is not easily defined owing to its dimensions, contexts and applications. From an SUD perspective, urban governance relates to a citywide approach for the proper governance of a city in relation to spatial planning, city management, economic development, local democratization, protection of the environment and social development (Meyer & Auriacombe, 2019). This definition suggests that urban governance provides an enabling environment for the realisation of other SUD pillars see Figure 6.

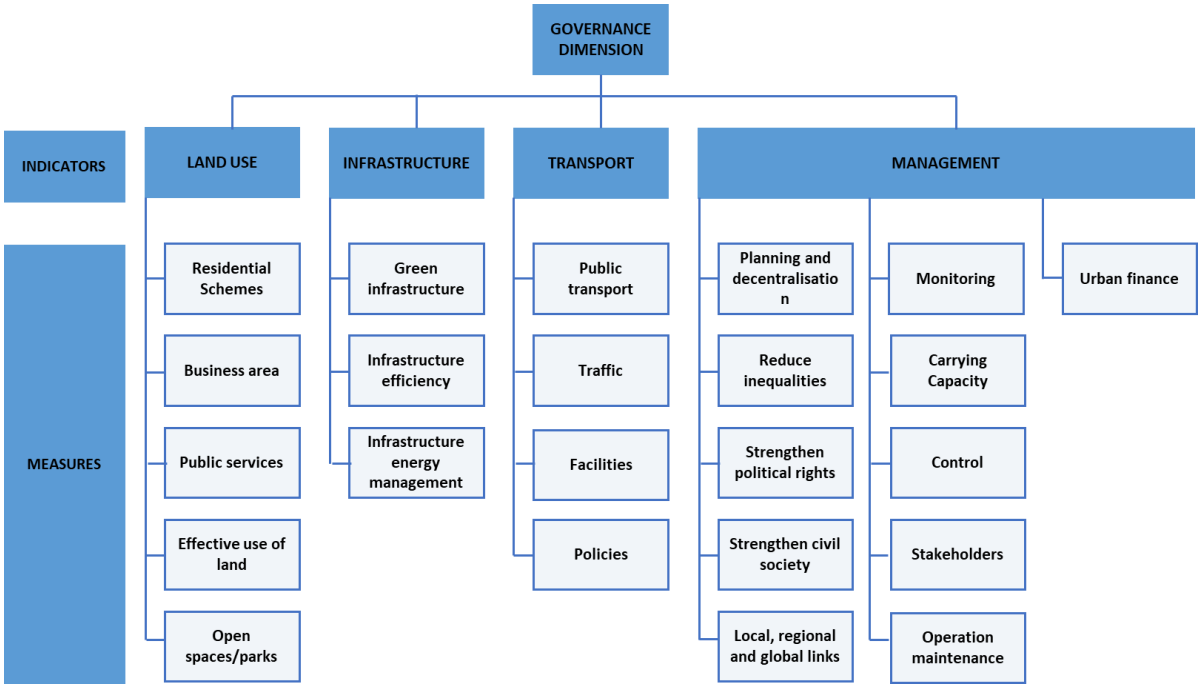


Figure 7: Governance/institutional dimension of SUD measures and indicators (Bhargava et al., 2020).

Urban finance is often seen as a key barrier preventing cities in middle- and lower-income countries from realising their SUD ambitions (Alexander et al., 2019). This finding suggests that the pillars of SUD cannot be realised without finance despite financial sustainability not being recognised as a pillar (Alexander et al., 2019). Therefore, ensuring financial sustainability by unlocking diverse financing instruments is critical for ensuring that cities continue to prioritise SUD actions.

2.6. Contextualising SUD in South Africa

2.6.1. SUD in South Africa

South Africa has committed to develop cities within the framework of SUD. The notion of SUD in South Africa emerges from a mix of key global and national commitments. At the global level, the critical shaping events have been the country's ratification of Agenda 21, the New Urban Agenda and the Sustainable Development Goals. Nationally, these have included the adoption of post-apartheid urban policies and planning instruments such as the New Urban Framework in 1997, the National Spatial Development Perspective (NSDP), the Department of Housing's 2004 Breaking New Ground document, Local Government's Local Economic Development Framework, the National Development Plan as well as the National Spatial Development Framework (Pillay, 2008).

The current framework towards SUD is encapsulated in the country's Integrated Urban Development Framework (IUDF), a policy document that identifies nine urban policy levers to guide the implementation of SUD in urban areas and towns. The IUDF defines SUD within the South African context as a process of "retrofitting the existing city footprint to produce compact, coordinated and connected cities, using transit-oriented development (TOD) and other urban planning strategies to yield desirable social, economic and environmental outcomes, as envisioned in the NDP" (COGTA, 2016). This description suggests that SUD in South Africa aims to address a combination of issues related to spatial fragmentation and socio-economic inequalities including the functioning of ecosystem services. The definition also highlights the inherently complex nature of SUD and the need for investing in a variety of interventions and urban governance levers to better articulate actions and to make the concept tangible. Owing to the magnitude of interventions that need to be marshalled, it is no surprise that the journey towards SUD has been characterised by struggles in urban areas (SACN, 2022).

2.6.2. Trends and patterns with sustainable urban development in South Africa

Over the past 20 years, various programmes and initiatives have been used to promote SUD in South African urban areas. This array of interventions provides a rich tapestry for understanding the general trends and patterns towards SUD in South Africa. The country's approach to SUD can be summed up in four observable trends. The first wave of engagement with SUD focused on improving living conditions including access to services for people living in urban areas, particularly those in previously underserved and informal areas. A further trend focused on regime change in urban governance and planning measures, while another trend, which is symbolic of SUD in South Africa, centred on addressing apartheid spatial planning through transit-oriented developments. The last representative pattern of SUD in South Africa is focused around green urban revolution. This includes initiatives such as the incorporation of green spaces, for example parks and gardens, into urban development projects as well as promoting the use of solar energy in housing developments, and the use of green roofs and walls (SACN, 2022).

2.6.3. Challenges and opportunities for sustainable urban development in South Africa

SUD is an inherently complex endeavour and South Africa's approach has been characterised with both challenges and opportunities. Urban spaces in South Africa still struggle with factors that make it difficult to promote SUD; these include inequality, rising informality especially within the urban centres as well as declining service delivery infrastructure (SACN, 2022). Additionally, insufficient access to funding in municipalities remains a challenge and makes it difficult to invest in SUD initiatives. SUD difficulties in South Africa are also exacerbated by the limited prioritisation of IUDF proposals by municipalities into their planning and governance mechanisms.

Despite these challenges, SUD still presents certain opportunities making it a worthwhile exercise for South African urban areas to undertake. Gunter and Massey (2020) postulate that the undertaking of urban development within an SUD framework has the potential to support the interconnectedness of the city and how places, spaces, the environment and people interact. Urban development should minimize resource use and repurpose existing urban infrastructure, a process that has not been done in many South African inner cities. Gunter and Massey (2020) further argue that the IUDF has not been fully activated by municipalities and, as a result, an opportunity exists through the deep engagement of IUDF to coordinate resources and organisations to support SUD.

2.7. The relationship between SEZs and SUD

The relationship between SEZs and SUD is multifaceted and context dependant. While SEZs can bring positive economic, social, and environmental impacts to cities, thus contributing to SUD, they can also generate negative externalities that undermine SUD objectives, thereby raising questions about their compatibility with facilitating SUD. Within this context, the relationship between SEZs and SUD is discussed in the sections below. The four dimensions of SUD will be utilised in order to examine the relationship.

2.7.1. Economic dimension

Research by Farole and Akinci (2011) and Khan et al. (2017) indicates that SEZs that are integrated in the urban development path of the city can attract new businesses and provide a favourable investment climate. In turn, this can trigger spillovers to the local urban economies and spur national economic growth in the long term. George (2015) attests to this through the example of the City of Bangalore where the establishment of SEZs resulted in tremendous economic growth within the city, growth in the middle class and established Bangalore as a major global hub for innovation. Additionally, in China, the Chinese government through the Shenzhen SEZ was able to significantly transform the city Shenzhen from a rural area into a global centre in technology and innovation (Liu & Cai, 2018).

Notably, most SEZs exist spatially as enclaves with as little connection and responsibility to their hosting urban environment. In turn, the divisions created by spatial segregation can lead to a lack of integration with local economies as the SEZs operate as isolated economic entities (Bach, 2011). In this manner, the existence of SEZs can result in imbalanced development and increased inequality within the urban environment (Sami & Anand, 2015). To this end, SEZs struggle to support economic sustainability in hosting urban area.

2.7.2. Social dimension

Socially, SEZs have been criticized for their limited impact on social inclusivity and equitable development (Lin & Wang, 2014). Low-skilled workers employed in SEZs may face poor working conditions, inadequate wages, and limited access to social protection (Chen, 2018). Furthermore, SEZs often depend on migrant workers who face issues of low wages, poor working conditions, and limited social services (He et al., 2019). The influx of foreign workers can also strain local resources and infrastructure, leading to social tensions and unequal distribution of benefits (van Grunsven et al., 2019).

In a different light, SEZs can support a city's socially inclusive development ambitions and improve livelihoods for residents. In the case of the Nansha Special Economic

Zone in Guangzhou China, the presence of the SEZ contributed to improved livelihoods for citizens (Yanga Wang & Liu, 2019).

2.7.3. Environmental dimension

While SEZs provide a fair measure of social and economic dividends for urban areas, they often face environmental sustainability challenges. SEZs tend to have higher resource consumption and pollution levels than other economic areas in the domestic environment due to their industrial concentration and weak enforcement of environmental regulations in favour of investments (Xu et al., 2019; Wang, 2013). Environmental degradation not only undermines the long-term sustainability of cities but also poses health risks for residents living in and around SEZs. This contention is supported by the research of Guo et al. (2018), who found a negative correlation between SEZs and air quality in Chinese cities.

Gong et al. (2017) explain that SEZs have a fundamental role for supporting the environmental sustainability ambitions of hosting urban areas as they can be leveraged as eco-industrial zones and focus on ecological improvements in terms of reducing waste and improving the environmental performance of firms. For example, the Atlantis Special Economic Zone, as a Greentech SEZ, is being leveraged by the City of Cape Town in South Afrifca as part of its commitment to transition to a green urban development pathway (Grant et al., 2020).

2.7.4. Institutional/governance dimension

Morberg (2015) argues that in the right urban institutional context, SEZs tend to promote economic growth and contribute positively to urban governance dimensions, while in the wrong institutional context they can cause resource misallocation and rent-seeking. SEZs may be poorly governed and lack transparency, which can lead to corruption and a lack of accountability for their impact on sustainable development.

According to Bach (2011), on the side of the spectrum where SEZs and SUD are integrated, the zones become indistinguishable from the hosting city, to the point of either dissolving zone designation (e.g. Shenzhen) or integrating multiple smaller zones into the cityscape. This integrated development is a result of institutional

coordination between different levels of government including implementing agencies. In addition, the joint development of urban and industrial policies linked to the SEZ corridor play an important role in establishing the contribution of SEZs to SUD (Sami & Anand, 2015).

SEZs also contribute to urban sprawl as they often lack integration with wider urban and regional planning including the surrounding urban fabric (Weiss, 2005; Zeng, 2010). This lack of connection hinders their ability to contribute to SUD. Fragmented development patterns can lead to increased commuting distances, traffic congestion, and limited access to basic services for SEZ workers (Bhattacharyya, 2017). Therefore, urban planning strategies should focus on integrating SEZs into the broader urban landscape, fostering mixed-use development, and providing affordable housing options to create vibrant, inclusive, and sustainable urban environments (Doherty & Pearce, 2017).

The relationship between SEZs and SUD is nuanced and can be understood along a spectrum where one end represents the separation between SEZs and realisation of SUD, and the other end represents an integrated state. To this end, a comprehensive and balanced approach towards achieving SUD through SEZs is needed, particularly one that considers the local conditions, stakeholders' interests, and sustainability goals. By adopting a holistic and contextual approach, policymakers, investors, and citizens can contribute to creating more sustainable and liveable cities for all. This can include incorporating sustainable development goals into their planning and management, involving local communities in decision-making, ensuring transparency and accountability, and promoting inclusive economic growth.

2.8. Conceptual Framework

A conceptual framework was developed to guide this study and understand the role of SEZs in facilitating SUD (see Figure 1). The conceptual framework is a simplified representation of how the research phenomena was explored (Adom Husseim & Agyem, 2018).

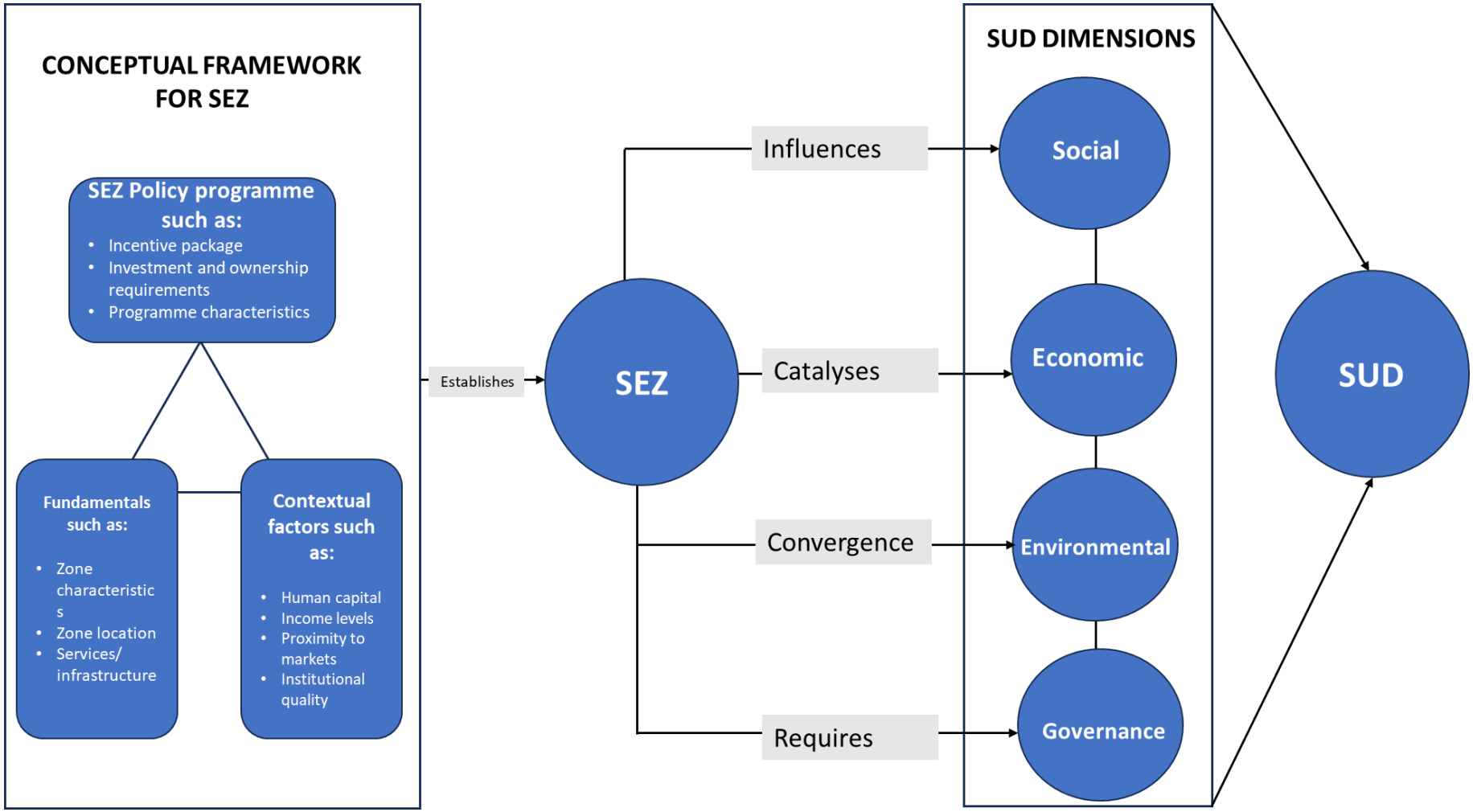


Figure 8: Conceptual framework for examining the role of special economic zones (SEZs) in facilitating sustainable urban development (SUD). The main objective of this research study is to examine the role of SEZs in facilitating SUD, with the Tshwane SEZ used as the case study site

This study was guided by the literature on relevant theories of SEZs including literature on the typology and evolution of SEZ. The theories and relevant literature were used to analyse the Tshwane SEZ. Additionally, the study was guided by literature on SUD, in particular the four pillars of SUD. An understanding of these pillars is integral to examining the relationship between SEZs and SUD. An interpretative approach was used to investigate the role of the Tshwane SEZ in facilitating SUD. The researcher used qualitative research to collect, interpret, and analyse data; specifically, interviews and document analysis were used for data collection.

2.9. Conclusion

The section contains a literature review on SEZs and SUD. From this review, the development of SEZs can be grouped into five broad theoretical approaches. Additionally, since the Shannon SEZ, SEZs globally have evolved in terms of typology. In a similar fashion, the nature and typology of SEZs in South Africa have also evolved. The section also discusses SUD, in particular the four pillars of SUD. The SUD concept is contextualized within the South African landscape revealing the complex outlook the country has in terms of realising SUD. Additionally the section reveals that the relationship between SEZs and SUD has both positive and negative features and that a balancing approach is required to enhance the mutually beneficial aspects.

3. RESEARCH STRATEGY AND METHODOLOGY

3.1. Introduction

This section outlines the process undertaken to conduct the research study. In conjunction, the underpinning research approach and design are discussed alongside the adopted procedures used to collect and analyse the research data. The section also presents the sampling approach including sample size and concludes with a discussion on the limitations of the study and an analysis of the reliability and validity of the research results and used measurements.

3.2. Research approach and design

To investigate the central and sub-research questions, a qualitative research approach was used, and a case study research design was selected as the appropriate analytical approach. The selected case study for this research is the Tshwane Automotive SEZ. Chapter 1, subsection 1.5 provides an overview of the case study site and the motivation for selection.

Creswell and Creswell (2017) highlight that a qualitative research approach supports the development of meaning and understanding towards individuals or groups associated with a social and human issue, while inductively building from particulars of information to general themes by making interpretations of the data. This stems from the fact that a qualitative research approach is concerned with generating descriptions and explanations based on the lived experiences of individuals (Hammersley, 2013). Therefore, this research approach seeks to uncover how individuals interpret their experiences, construct their world view and the meaning they attribute towards these experiences.

Case study research design enables the researcher to undertake an in-depth exploration and collect detailed information of the social phenomenon, situation, organisation or social unit (Creswell, 2009). This entails that case study research enables the investigation of a contemporary phenomenon within its real-life context (Tetnowski, 2015). Therefore the utilisation of qualitative case study research design is beneficial for demonstrating the interaction between specific situational demands or factors within a complex phenomenon.

In view of the above, the use of a qualitative research approach to examine the role of SEZs in facilitating SUD encouraged in-depth engagement with various aspects of the social problem under analysis. The approach enables research participants to draw on their lived experiences and knowledge for the development of practical recommendations. The flexible and explorative nature of a qualitative research approach enables the construction and reconstruction of data without distorting or reducing the meaning and allows for the investigation of causalities to contextualise the study (Almeida, Faria & Queirós, 2017; Rahman, 2017).

The case study research design supported the detailed collection of case specific data and information to support the holistic understanding of the research challenge. Through the case study research design, a range of lived experiences were captured (reducing bias) and the insights generated were used to understand the interplay between SEZs and hosting urban areas within the context of SUD. Given the real-life view of case study research, the gathered data and recommendations are useful for lesson learning and formulation of best practices for other urban areas that have SEZs and want to develop these areas with the intention to realise respective SUD objectives.

3.3. Data collection

Primary and secondary data were obtained in order to respond to the research problem under investigation. To collect the secondary data a document analysis was undertaken, while the primary data was obtained through a 1-hour interview with key informants. Sub-sections 3.3.1 and 3.3.2 provide a detailed description of how the data was collected using the respective methods.

3.3.1. Document analysis

Secondary data was obtained through a document analysis of the institutional and organisational documents of the case study area, specifically TASEZ and CoT. A document analysis is a systematic procedure for reviewing or evaluating documents—both printed and electronic (computer-based and internet-transmitted) material (Bowen, 2009).

A total of 14 documents were reviewed. The documents were retrieved from the TASEZ or CoT websites, received from officials of CoT as well as through a Google search. There was intention by the researcher to review further documents however, the officials from TASEZ did not permit the researcher access to these citing confidentiality reasons. The techniques used to conduct the document review were skimming (superficial examination) and reading (thorough examination). The collected data was then interpreted through thematic analysis as shown in Chapter 4.

The following documents were reviewed:

1. Special Economic Zone Act, 16 of 2014
2. SEZ Act - Regulations for Regulating the Responsibilities, Powers and Functions of a Board of a Special Economic Zone
3. SEZ Performance Monitoring and Evaluation Framework.
4. Tshwane Automotive SEZ Annual Report 2021/2022
5. Tshwane Automotive SEZ Annual Report 2022/2023
6. City of Tshwane Integrated Development Plan 2022 – 2026
7. City of Tshwane Regional Spatial Development Framework - (RSDF) 2018
8. City of Tshwane Vision 2055
9. Integrated Urban Development Framework, 2016
10. National Spatial Development Framework, 2023
11. Industrial Policy Action Plan 2018/19 – 2020/21
12. South Africa's Automotive Industry Master Plan to 2035
13. National Environmental Management Act 107 of 1998 – Listing Notice 1; Listing Notice 2; Listing Notice 3
14. Spatial Planning and Land Use Management Act, 16 of 2013 (SPLUMA)

3.3.2. Semi-structured interviews with key informants

To collect primary data for the research, semi-structured interviews with key informants were conducted. Semi-structured interviews are issue focused and allow for a comprehensive accounting of the key informant's understanding and experience regarding a specific issue (Patton, 2015). Data received from semi-structured

interviews is interpretable with the aim to support problem solving or discovering the topic (Chilisa, 2019).

To guide the interviews, four semi-structured questionnaires were initially developed for key informants in each of the targeted stakeholder groups. Key informants were identified in the following four stakeholder groups:

- Stakeholder Group A: Selected informants from Tshwane Automotive SEZ
- Stakeholder Group B: Selected informants from City of Tshwane Municipality
- Stakeholder Group C: Key informants and experts employed in institutions within research, academia and think tanks with a focus on SEZ development and sustainable urban planning and development
- Stakeholder Group D: Selected informants with policy and regulation expertise on SEZ and SUD

The rationale for the selection of the four stakeholder groups is presented in the next section. Due to the similarities between the questionnaire for Stakeholder Groups C and D as well as obtaining a single participant to be interviewed in the latter, the questionnaire for Stakeholder Group D was combined with Stakeholder C and administered as one questionnaire. In view of this, three questionnaires consisting of a combination of open- and close-ended questions were administered before interviews with respective key informants. The questionnaires were distributed to the interviewees through email. Interviews were undertaken by the researcher both face to face and remotely using MsTeams and Google Meet platforms.

3.4. Sampling

Purposive sampling was used to identify the key informants to be interviewed. Purposive sampling is a type of non-probability sampling whose characteristics are defined for a purpose that is relevant to the study (Andrade, 2020). The purposive sample technique allows for better matching of the sample group to the aims and objectives of the research, as informants have been identified beforehand and are able to provide data that is relevant to the topic under investigation with limited opportunities of veering off topic.

Initially, the study aimed to interview a sample size of 15 stakeholders from the following four stakeholder groups:

Selected informants from Tshwane Automotive SEZ to provide in depth information on SEZ interaction with CoT and dynamics with regards to contributing towards SUD.

- **Selected informants from City of Tshwane Municipality** to provide in depth knowledge on the city's SUD strategy, anticipated role and contribution of the Tshwane Automotive SEZ to the strategy as well as insight on mechanisms to support interactions.
- **Key informants and experts employed in institutions within research, academia and think tanks with a focus on special economic zones development and sustainable urban planning and development** to generate insight on how SEZs and urban areas co-exist to support SUD and well as what mechanisms should be leveraged. Targeted institutions included: National Cleaner Production Centre at the CSIR, South African Cities Network, South African Chair in Industrial Development, Gauteng City Region Observatory, and Trade and Industrial Policy Strategies.
- **Selected informants with policy and regulation expertise** to gain insight on current policy mechanisms for supporting SEZs and urban relations and modifications, if needed in current policies to elaborate the position of SEZs in promoting SUD. Targeted institutions included National Treasury, **the dtic**, and the Gauteng Department of Economic Development.

However, due to challenges with securing the identified stakeholders for interviews, the researcher managed to interview 13 participants. The 13 participants were regarded as sufficient as they are spread across all four initially targeted stakeholder groups, providing for comprehensive coverage of the major stakeholder perspectives needed to address the research questions. Additionally, this enabled meaningful cross-group analysis and validation of findings. In-depth interviews lasting approximately 1-hour were conducted with each stakeholder. This enabled strong quality dialogue with highly relevant participants and the emergence of crosscutting themes to draw meaningful conclusions and validate findings.

3.5. Data analysis

To analyse the primary and secondary data, a thematic analysis approach was used. Thematic analysis (TA) enables the identification of themes and patterns across qualitative datasets to generate new insights and concepts. It is a powerful yet flexible method for seeking to understand experiences, thoughts, or behaviours across a data set (Kigera & Varpioa, 2020).

The researcher adopted the following six-step process of TA according to Kigera and Varpioa (2020):

1. Analysing the data
2. Generating initial codes
3. Searching for recurring patterns or themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report.

This process was selected as TA is instrumental for understanding experiences, thoughts, or behaviours towards the extent to which the Tshwane SEZ facilitates SUD in relation to the CoT. Additionally, TA enabled the examination of similarities or patterns across data sets in order to answer the main and sub-research questions of this study.

Main research question:

- What is the role of SEZs in facilitating SUD?

Sub research questions:

- How do the nature and functions of SEZs enable SUD?
- What is the relationship between SEZs and cities, and does the relationship promote SUD?
- What are the SEZ policy and governance gaps and opportunities towards SUD?

The data from key informant interviews were transcribed and analysed after which codes were generated from the data and the data were subsequently organised into themes. These themes were then reviewed, defined and named.

3.6. Reliability and validity

Reliability and validity are regarded as indicators of the quality of the measurement tools or research approach of the study. Reliability refers to the extent to which results are consistent over time and whether the results of a study can be reproduced under a similar methodology (Golafshani, 2003). Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are (Golafshani, 2003).

The purpose of this study is to examine the extent to which SEZs can facilitate SUD with the Tshwane SEZs as a case study. To ensure the reliability of the study, primary data was collected using semi-structured interviews with selected key informants, and secondary data was collected from official policy and planning documents from CoT and the Tshwane SEZ. The use of a qualitative research instrument such as a semi-structured interview guide enabled consistency in interview results while allowing flexibility to probe for more detailed findings. Additionally, a data analysis was undertaken following the established thematic analysis approach that included the qualitative coding of research results, finding themes and writing the report. In view of this if the above measured are followed, by other researchers investigating the same topic in a different setting, the investigation would produce the same results.

With regards to validity, the case study location and population were carefully selected to be representative of the research questions. The Tshwane SEZ provides a relevant example of an urban SEZ in the South African context. While a single case study cannot be generalized to all contexts, the Tshwane SEZ was selected as a representative case of an urban SEZ in South Africa, allowing for analytical generalization of findings. The study's findings are connected to and build upon prior research and theory on SEZs and SUD, enhancing the transferability of results to other similar cases and the broader scholarly understanding of the topic.

In summary, these research strategies support the overall trustworthiness and credibility of the research study's findings regarding the role of the SEZs in facilitating SUD. Notably, limitations to the reliability and validity of the research approach are that qualitative data is inherently subjective and that the specificities of the research outcomes are limited the Tshwane SEZs and may limit wider generalizability.

3.1. Limitations

This research study set out to investigate the role of SEZs in facilitating SUD as contextualised through the case study of Tshwane Automotive SEZ. Though the research contains rich insights, there are several limitations to the study. Firstly, the research focused on one case study site, which happens to be a newly developed SEZ with less than 5 years of establishment. To this end, conclusions of the research are specific to the case study site with limited generalisations. A comparative study that looks at multiple case study sites could have yielded different results. Secondly, given that the SEZ is relatively new, some of the recommendations may not be applicable for SEZs that are 10 years or older as they may have already addressed some of aspects mentioned.

The primary data sampling size was limited to 13 key informant interviews, while the secondary data sampling size was limited to 14 documents. If more people were involved in the sample size, perhaps different results could have been obtained. Additionally, the sampling pool was predominately made up of informants from governance and planning levels in relation to SEZs and SUD; if the sampling pool had been broadened to include other participants such as workers of the SEZ, tenant firms, as well as community members near the TASEZ, different results could have been obtained. However, as the research report is towards a masters qualification in governance, the researcher notes that it was appropriate at a first level to interview key informants involved with the governance and planning of SEZs and SUD. Perhaps future studies could include the broadened participants is described above.

3.2. Ethical considerations

The research was conducted in accordance with the ethical clearance received obtained from the Wits University School of Governance Ethics Committee constituted under the University Human Research Ethics Committee (Non-Medical). Therefore, the interview guide and interviews were conducted in a manner that did not make respondents feel vulnerable or question whether their anonymity will be compromised.

A consent form was presented to all key informants prior to the interview for their signature and confirmation to partake in the research. In line with the ethical certificate,

respondents were informed about the objectives of the interview and how their respective responses would be utilised within the research and kept safe for archiving. Respondents were also informed that they could at any time choose to not answer questions or not go ahead with the interview.

3.3. Conclusion

This chapter presents the research strategy and methodology. The research seeks to examine the role of SEZs in facilitating SUD. To do this a qualitative case study research approach and design was used with the Tshwane SEZ as the case study site. Primary and secondary data were collected through semi-structured interviews with 13 participants (primary data) and a document analysis of 14 documents (secondary data). A thematic analysis approach was used to analyse the data.

4. PRESENTATION OF RESEARCH RESULTS AND DATA ANALYSIS

4.1. Introduction

This section presents the research findings and provides an analysis of the data gathered through the document analysis and key informant interviews. The findings from the document analysis are presented separately from the interview results. The results from the document analysis are structured according to the sub-research questions for this study as follows:

- How do the nature and functions of SEZ enable SUD?
- What is the relationship between SEZs and cities, and does the relationship promote SUD?
- What are the SEZ policy and governance gaps and opportunities towards SUD?

4.2. Presentation of results: Document analysis

The study examined 14 documents (as listed in Section 3.3.1.) covering policy, long-term strategic planning, as well as monitoring and evaluation. Initially, the researcher intended to analyse additional materials, including:

- TASEZ Master Plan
- Business Case for Tshwane SEZ
- Intergovernmental Relations Agreement (signed by Gauteng Department of Economic Development, **the dtic**, and CoT) for establishing TASEZ PTY(LTD)
- TASEZ Board Terms of Reference
- TASEZ Terms of Reference for Committees

However, this expanded review did not occur because the interviewed officials from TASEZ declined to grant the researcher permission to access these documents on the basis that the documents were confidential.

4.2.1. Nature and functions of SEZs and the extent to which they enable SUD

The analysis revealed that within the South African context SEZs are geographically defined areas that can take a variety of forms such as free port, free trade zone, industrial development zone and sector development zone (Special Economic Zones Act, 2014). The SEZs operate and are designated according to the Special Economic Zones Act, 16 of 2014. At an institutional level, SEZs can be a public entity[2], municipal entity[3] or public-private partnership[4], which manages and, in some cases, operates the SEZ as well as applies for the designation of the SEZ. At a management level, an SEZ Board exists and is responsible for the efficient governance and management of the business affairs of the SEZ entity. SEZs in South Africa provide incentives and tax breaks.

SEZs in South Africa have several functions, which can be categorised into five main areas, namely economic growth and export promotion, industrial development, infrastructure development, investment attraction, and socio-economic (TASEZ, 2023). In terms of economic growth and export promotion, SEZs serve as economic development tools to promote national economic growth and export by using support measures to attract targeted foreign and domestic investments and technology (Department of Trade and Industry (**the dti**), 2016). Furthermore, SEZs act as areas for promoting integration with local industry and increasing value-added production. During the 2022/2023 financial year, the Tshwane Automotive SEZ reported increased investment from Ford Motor Company South Africa, which contributed towards economic growth of the Automotive Sector due to increase FDI. Specifically, Ford invested in tooling equipment.

With regards to industrial development, SEZs should facilitate the creation of an industrial complex, having strategic national economic advantage for targeted investments and industries in the manufacturing sector and tradable services (**the dti**,

[2] Refers to a public entity as defined in Section 1 of the Public Finance Management Act and listed in Schedules 2 and 3 to that Act.
[3] Refers to a municipal entity as defined in Section 1 of the Municipal Systems Act.
[4] Refers to a public-private partnership contemplated in Regulation 16 of the Treasury Regulations issued in terms of the Public Finance Management Act or Section 120 of the Municipal Finance Management Act and any regulations issued in terms of the last-mentioned Act.

2016). Within this context, the TASEZ focuses on the automotive sector, promoting integration with existing industry clusters. In concert with industrial development is infrastructure development, one of the primary functions of SEZs in South Africa is to develop the necessary infrastructure to support industrial activities. These include transport, IT and sanitation, water network infrastructure as well as other essential infrastructure such as buildings to enable businesses to operate efficiently. The document analysis revealed that the provision of infrastructure for TASEZ occurred in phases and each of the shareholders, namely GDED, CoT and **the dtic** provided financial support towards infrastructure. During Phases 1 and 1A of the development, **the dtic** approved top structure funding to the value of R 3 303 billion. The CoT committed R 288 million and the GDED availed R 314,4 million for bulk infrastructure. The GDED further committed an additional R 240,8 million (TASEZ, 2024).

In 2023, the Tshwane Automotive reported investments of R 4.6 billion by 2022/23, exceeding the forecast of R 3.4 billion and demonstrating its ability to contribute towards investment attraction(TASEZ, 2024). Investment action is one of the key functions of SEZ as it entails the attraction of targeted foreign and direct investors as well as the offering of incentives or tax incentives to draw in investors and create a favourable business environment. The final category of functions that SEZs in SA perform is related to the promotion of socio-economic development and benefits. Within this context, SEZs aim to support employment creation and the broadening of economic participation by promoting small, micro and medium enterprises and co-operatives, and encouraging skills and technology transfer. In the case of TASEZ, during the 2022/2023 financial year, a total of 2 425 jobs were created within the zone, excluding construction jobs (TASEZ, 2024). Notably the number of jobs with SEZs in South Africa is measured by those jobs that remain in existence after three financial year-ends. TASEZ has only completed two financial year-end reports.

The document analysis provided insights into how SEZs contribute towards SUD. There are several mechanisms within the SEZs functions that enable SEZs to contribute towards SUD as contextualised through TASEZ, despite the SEZs Act not mentioning the words “sustainable”, “urban” or “sustainable urban development”.

With regards to the economic pillar of SUD, SEZs can contribute towards economic growth and local economic participation. TASEZ emphasizes local SMME development and aims to source at least 70% of employees from surrounding communities (TASEZ, 2023). A factor noted in the CoT Integrated Development Plan was that by attracting investments and creating jobs, TASEZ contributes to the economic growth of CoT. During the construction of Phase 1 and Phase 2 of the SEZ, 30% of the construction was awarded to 33 local SMMEs.

Regarding the social pillar of SUD, SEZs support social advancement through employment creation as well as skills transfer. The TASEZ aims to construct an Academy in order to conduct training programmes and establish partnerships with educational institutions to facilitate skills transfer. Additionally, the investment in infrastructure not only supports the SEZ, but also benefits the broader urban area.

In relation to the environmental pillar of SUD, the document analysis revealed that the construction and operation of the SEZs should be in accordance to the National Environmental Management Act, 107 of 1998 (NEMA). Although NEMA, does not make explicit provisions for SEZs, it does provide for the related activities that need to occur in order to construct and operate an SEZ. In the case of TASEZ, they are committing towards reducing the carbon footprint by increasing the renewable energy share. Notably, the CoT IDP and Regional Spatial Development Framework do not ascribe or mention the role of TASEZ in enhancing environmental protection.

At a governance and planning level, SEZs can contribute towards urban integration provided they are strategically located. TASEZ's location bordering the Silverton industrial node and townships such as Mamelodi and Nellmapius promotes spatial transformation and urban integration (TASEZ, 2023). Notably, CoT Regional Spatial Development Framework does not mention the SEZ, however it does mention the concept of Tshwane Automotive City concept that the TASEZ falls under and details that it must be developed in accordance to SPLUMA norms, of which one focuses on spatial equity.

Notably, the investigated documents also highlight challenges that may influence sustainable development, namely electricity supply constraints, which may see some

tenants reduce investment due to poor energy security (TASEZ, 2024). Additionally, slower than anticipated revenue collection from tenants may affect the scope and ability of TASEZ to contribute towards SUD initiatives (TASEZ, 2024).

4.2.2. Relationship between SEZs and cities, and the promotion of SUD

The document analysis showed that there is a complicated interaction between SEZ and cities, as evaluated in view of TASEZ and the CoT. This complex relationship is discussed in relation to urban design, governance and economic development.

With regards to economic development, the CoT's IDP identities TASEZ as part of its economic development strategy. This suggests that SEZs are seen as tools for promoting economic growth and development within urban areas. The allocation of R 594 million over the 2022 Medium Term Expenditure Framework for TASEZ projects indicates a significant investment in this strategy (CoT, 2022).

The development of SEZs seems to be linked to infrastructure development. For instance, the IDP mentions the construction of internal bulk infrastructure for Phase 2 and the Central hub building of the TASEZ (CoT, 2022). This suggests that SEZs can drive infrastructure development in cities, potentially contributing to overall urban development.

The relationship between TASEZ and CoT also indicates that SEZ and hosting urban areas can be linked at governance level. The CoT is an equal shareholder to TASEZ along with the GPG and **the dtic** (TASEZ, 2024)**.** In line with the SEZ Act, TASEZ has a board of directors wherein the CoT is also represented. Financially, TASEZ has three funders: GPG, CoT and **the dtic**. The CoT IDP mentions the financial linkage between CoT and TASEZ in the form of the financial allocation from the municipality to the SEZ for new infrastructure assets.

The 2021/2022 TASEZ Annual Report noted the representation of CoT in the TASEZ Committees of the Board, particularly the Infrastructure Committee. The Infrastructure Committee's role is to oversee the initiation of the operational process of TASEZ,

resolve bottlenecks hindering project implementation, guide management, and act as a catalyst to ensure all stakeholders and management deliver on their respective responsibilities around land acquisition, township establishment, and provision of required infrastructure according to set timelines. The Terms of Reference of the committee were not provided by TASEZ and, as a result, it was difficult to assess the extent to which the Committee considers SUD aspects.

However, the 2021/22 Annual Report of TASEZ provides a list of 16 key functions of the Committee, from these the following were found to promote SUD:

a) Provides strategic and technical guidance with, among others, infrastructure-related responsibilities of land acquisition, infrastructure development for the SEZ including township establishment and alignment with the SEZ development strategy of **the dtic**, GPG and CoT.
b) Co-ordinate and integrate technical inputs from strategic national, provincial and local stakeholders.
c) Ensure all projects are in alignment with policies and strategy of the state, across the three spheres of government.
d) Development and management of community engagement, SMME development, labour development, skills development, marketing and communications, and stakeholder strategies.

In the review of the extent to which the relationship between cities and SEZs promote SUD, limited linkages were found, as the documents assessed do not explicitly link SEZs to SUD, but emphasize the importance of sustainability in urban planning. The CoT Regional Spatial Development Framework mentions sustainable development as a key principle (CoT, 2018). However, it is not clear from the provided documents how SEZs specifically contribute to or align with these sustainability goals. While SEZs such as the TASEZ may contribute to economic growth and employment, which are aspects of sustainable development, it is unclear from these documents whether they substantively align with all principles of SUD.

4.2.3. The SEZ policy and governance gaps and opportunities towards SUD

To understand the SEZ policy and governance limitations and opportunities towards SUD, a review of the SEZs Act and the SEZs Performance Monitoring and Evaluation Framework was undertaken. The Act exhibits several governance gaps in terms of promoting SUD. Firstly, it does not explicitly mention sustainability as an overarching principle for SEZs; greater emphasis is made on economic growth, investment, exports, and industrialization. For SEZs to drive SUD, sustainability should be embedded as a key tenet within policy prescripts.

Secondly, there are no specific provisions or requirements around measuring and reporting on the environmental and social impacts of SEZs. Notably, the Act does not specify any requirement or norms on how the SEZ is to interact with the local environment to promote SUD. Moreover, the SEZ Act lacks concrete incentives for SEZs and tenant firms to adopt green technologies, renewable energy, and sustainable infrastructure.

The numerous gaps within the SEZ Act and the monitoring framework provide an opportunity to embed SUD. The following sections of the Act were identified: Section 4(2) on the purpose of SEZs could incorporate the notion of sustainability and expand to include that one of the aims of SEZs is to promote SUD. Here, the Minister's power to make regulations under Section 41 could be seen as an opportunity to introduce more detailed conditions and requirement of the role of SEZ in facilitating SUD and interaction between SEZs and local or hosting urban areas in order to address these gaps in the Act itself.

Section 23(3)(b) of the Act makes mention of the need for a feasibility study, the details of which should be contained in Regulation No. 6 of 2016. Here, there could be an opportunity within the feasibility study to integrate SUD elements. The requirement in Section 38 for businesses to indicate how they achieve the SEZ purpose when applying to locate in a SEZ provides an opportunity to embed SUD requirements into the application and approval process. Section 20 (2) makes mention of the criteria for distributing money from the SEZ fund, where one criterion could be based on the sustainability and facilitation of SUD. In addition, there could be an opportunity to also expand the duties of the SEZ advisory Board as detailed in Section 11 (1) to consider aspects linked to SUD for the respective SEZs. This would ensure that the SUD is

prioritised at the highest governance level of the SEZ. Section 16 describes the establishment of Committees of the Board; this provision could be leveraged to constitute a Committee that addresses the promotion of SUD in the respective SEZ.

4.3. Presentation of results: Key informant interviews

A total of 13 key informant interviews were conducted. The results and findings from the interviews are presented in alignment with the key sections of the administered questionnaire. The administered questionnaires were organised into the following five key parts:

- Part A: Introductory questions. Questions under this section aimed to establish the profile of the key informant by gathering information about the informant's role, responsibilities, and affiliation with the TASEZ.
- Part B: Interaction between SEZs and urban areas. The questions presented under this section sought to gather information on the significance of the interaction between SEZs and the urban areas they inhabit. Additionally, this part seeks to uncover, based on the interviewee perceptions, any challenges that may impede the integration between SEZs and their host urban areas.
- Part C: SEZs nature and functions as it relates to SUD. This segment of the questionnaire focuses on the interviewee's perceptions regarding SUD and explores the potential of SEZs, as industrial policy instruments, to contribute to the foundational principles of SUD.
- Part D: TASEZ and SUD. This section delves into the specific case study of the TASEZ to ascertain the extent to which it facilitates SUD.
- Part E: Closing comments. Questions represented under this section aimed to solicit the interviewee's perception on vital reforms to the SEZ policy and key success factors for SEZs to consider for strengthening the role and contribution towards the SUD path of a city.

4.3.1. Interviewee profile

Table 2 below provides an overview of the interviewee profiles. As mentioned earlier, 13 interviews were conducted, of which 8 of the interviewees had a direct connection

with TASEZ, one had an indirect connection, and 4 did not have a connection with TASEZ.

Table 2: Interviewee profiles.

Respondent ID	Degree to which the respondent's duties are associated with SEZ or SUD[5]	Level of connection with TASEZ[6]
Respondent 1	• SUD: High • SEZ: Medium	Direct
Respondent 2	• SUD: Medium • SEZ: Medium	Direct
Respondent 3	• SUD: High • SEZ: Low	Indirect
Respondent 4	• SUD: High • SEZ: High	Direct
Respondent 5	• SUD: Medium • SEZ: High	Direct
Respondent 6	• SUD: Low • SEZ: High	Direct
Respondent 7	• SUD: Low • SEZ: High	Direct
Respondent 8	• SUD: Medium • SEZ: High	Direct
Respondent 9	• SUD: Medium	None

[5] The degree to which the participant's duties at work are associated with SEZ or SUD were ranked in terms of high, medium or low, where:
- high refers to extensive involvement and responsibility in one's duties towards SEZ or SUD
- medium implies moderate involvement or responsibility in tasks towards SEZ or SUD
- low refers to minimal involvement or responsibility towards SUD or SEZ within their work duties

[6] The level of connection respondents have to TASEZ was identified as direct, indirect or none, where
- Direct indicates a person involved in the establishment of TASEZ or currently associated with TASEZ as either employee, board member, member of a committee or engages with TASEZ employees in their fulfilment of their duties.
- Indirect refers those that are minimally associated or connected with TASEZ
- None – refers to no connection to TASEZ.

Respondent ID	Degree to which the respondent's duties are associated with SEZ or SUD[5]	Level of connection with TASEZ[6]
	• SEZ: Medium	
Respondent 10	• SUD: Medium • SEZ: Medium	None
Respondent 11	• SUD: Medium • SEZ: High	None
Respondent 12	• SUD: Medium • SEZ: High	None
Respondent 13	• SUD: Medium • SEZ: High	Direct

Most of the interviewees had a high degree of association with SEZs in their duties. In comparison to SUD, most of the interviewees had a medium degree of association in their duties with SUD. The above interviewee profile provides insights to the extent to which the respondents were able to broadly identify the role of SEZs within the larger context of SUD.

4.3.2. Interaction between SEZs and urban areas

4.3.2.1. Significance of SEZs interacting with hosting urban areas

The majority of the respondents recognised that it is important for SEZs to interact with their hosting urban areas. They identified that these interactions provide the opportunity to create integrated land use where people can work, play and live. The majority of respondents who expressed this sentiment had a direct connection to TASEZ and their duties were highly or moderately (medium) associated with SEZs and they had a high or medium degree of association with SUD.

Respondent 13 expanded on the significance of SEZs interacting with their hosting urban areas by indicating that the interaction forms part of the value proposition offered to investors. This was detailed in the following manner:

> "*When you deal with an investor, you don't only offer an investor a location to set up a project. You also need to think about how you are going to offer that*

same investor a space where they can live, and a space where they can play. So apart from work, which is obviously inside the boundaries of the SEZ. Live and play happens outside the boundaries of the SEZ. So, it's absolutely critical to have that in investor attraction perspective"

Furthermore, three respondents from the CoT and one from **the dtic** recognised that the strengthening of linkages between SEZs and hosting cities is vital because the SEZ depends on city services such as bulk water supply and energy to function. Respondent 7 explained this as follows:

"it [SEZ] *must have a very close, interaction with the planners of the city and the development within which it has to happen…it must be considered as well by the authorities of the city, most of the approvals hinges around the city's, regulatory framework with regards to the supply of water and services and energy, bulk infrastructure related to accommodating these things that I might say may be the requirements of the investors themselves"*

Two respondents whose duties had a medium degree of interaction with SUD but a high degree with SEZs identified that the interaction between SEZs and hosting urban areas, in particular the immediate local community, facilitates co-ownership of the SEZ and prevents the notion of it being seen as a foreign phenomenon or enclave with few ties to the community. Respondent 11 explained that when SEZs exists in isolation of the local community, they could be subject to vandalism and rejection from the community due to a lack of co-ownership of the SEZ.

A few respondents who are directly involved with TASEZ and have duties with a high degree of association with SEZs identified that the interactions between SEZs and hosting urban areas could be beneficial for SMMEs operating outside of the SEZs. The SMMEs might find business opportunities due to activities happening inside SEZs. Additionally, a few respondents pointed out that when SEZs create linkages with hosting urban areas, there could be areas of employment for students coming out of the universities and institutions of learning from the urban environment. One respondent articulated this as follows:

"The other part of it is that a lot of the investors that come, there [are] a number of questions they will typically ask you. The first one would be: Where can I draw skills from? So, it is important to have some form of a relationship with the tertiary educational institutions, that [are] in and around that SEZ" Respondent 13

4.3.2.1. Challenges or contributors which hinder interlinkages between SEZs and hosting urban areas

One interviewee from CoT highlighted poor leadership coupled with short term planning at the urban governance level as one of the challenges that affect the interaction between SEZs and hosting urban areas. This was expressed in the following manner:

"So, the challenge is the lack of the [visionary] leadership on how we want to see the city in the next 10-15 years, the technical experts just plan, based on what is presented to them, not based on what the, vision should be like"
Respondent 4

In addition, a few interviewees identified that SEZ planning should also be interlinked with local government planning initiatives such as the IDP to foster cohesion. Five interviewees from CoT and SARCHI commonly observed that differences in the political economy of local and national environment could affect the integration of SEZs in their hosting urban environments. The below response, substantiates on this observation as follows:

"*Local government planning should speak to SEZ planning. If you've got a local LED department, to what extent are they give[n] scope to work around SEZ programmes, or is it a provincial function? And we have to have clarity in terms of whose responsibility they are, because you find that sometimes SEZs, their focus is related to the provincial, but at the same time, they are rooted in the local municipality"*
Respondent 12

Eight of the interviewed participants shared that unmet expectations from the community over the opportunities and limitations of an SEZ can cause a rift in the interaction between SEZ and hosting urban area. For instance, participants who were interviewed acknowledged the discrepancy between the belief that the establishment of an SEZ would generate job prospects for local communities and the actual reality. This is often because the companies operating within the SEZs have to employ skilled workers from outside the SEZ community due to the scarcity of specialised skills and a low supply of skilled labour locally. This assessment as expressed by one of the respondents in the following light:

> *"What could create that fissure between the SEZ and the hosting urban areas, the assumptions that the skills that will be needed for the sectors will come from the surrounding communities, and, they don't, and the SEZs and the companies that are operating, they have to import those skills, and there's not a transfer of skills"*
> Respondent 9

Respondents recognised that poor coordination and communication among spheres of government responsible for SEZs could perpetuate the enclave effect. Four of the interviewed participants whose duties have a high or medium degree of association with SEZ but have no level of connection with TASEZ expressed that the legacy of apartheid spatial planning affected the exploitation of the positive effects of the interlinked SEZs and hosting urban areas.

4.3.3. SEZ nature and functions as they relate to SUD

4.3.3.1. Perceptions on the concept of SUD

Respondents provided nuanced interpretations of SUD. The majority of respondents with a high and medium degree of interaction with SUD in their duties identified SUD as an integrative concept consisting of social, economic, environmental and governance aspects. Respondent 5 had the following to report:

> "*When we look at sustainable urban development I think of an area where there's opportunities for social and productive livelihoods. I think of an area*

where environment and the economic development, they coexist, so environmental protection coexists with economic development and the impact of the economic processes are reduced on the environment and then lastly, I think of an area where there is good governance, good governance in terms of integrated planning, good governance in terms of having a liveable city and also good governance in terms of enhanced participation like where communities, policymakers or the city developers actively participate together in order to form the city"

A different perception of SUD was provided by one of the respondents from CoT who expressed that SUD is about mitigating climate impacts and prioritizing brownfield redevelopment. In a different light, Respondent 11 explained SUD through an intergenerational lens as seen below:

"Within the indigenous communities around the world, they talk about seven generations. And so, what it talks about in the indigenous communities in South Africa and South America [is that] if you are in the middle and you look three generations forward and then you look at three generations back so, the three generations you are would be your children and your grandchildren and then your great- grandchildren, that's your three generations going forward and from a sustainable development perspective the wellbeing for the generations to come [against] what are you doing now?"

4.3.3.2. SEZs and four pillars of SUD

Notably, twelve of the thirteen respondents observed that SEZs had a positive role to play in all the pillars of SUD. One respondent, specifically respondent 10 who has a medium degree of association with SEZ and SUD as well and no interaction with TASEZ, observed that SEZs could have a negative role towards the social pillar because it could be difficult to assess the trickle-down effect of SEZs in ambient hosting communities.

4.3.3.2.1. Social dimension

During the interviews respondents reported on three main areas where SEZs contribute towards the social pillar of SUD. Most interviewees identified that, firstly,

socially, SEZs are useful for the creation of more inclusive societies as they can be catalytic environments where people can stay, work and play. This factor was pronouncedly expressed by Respondent 4 as seen below:

> "*By having an SEZ in a social element, we are creating an environment where people can stay, can work and can play. Within the context of the SEZ then it talks to what will be the social need, what is it that the, the society will need socially and those infrastructure and facilities will be incorporated very close to where they are staying*"

Secondly, most respondents that were directly involved with SEZs recognised the role of SEZs in promoting social integration, job creation, and addressing spatial inequalities. To contextualise this common view, Respondent 1 mentioned the following:

> *"Economic activity in the SEZ has a social impact, first spinoffs should be felt by the immediate community. Places of home, work and recreation should be within close proximity - SEZs have a role in reversing apartheid spatial planning."*

Lastly, three respondents reported that the presence of the SEZs within hosting urban areas provides an opportunity to improve the livelihoods of community members through job creation opportunities, development of educational facilities or training centres in SEZs.

In a different light to the above observations, Respondent 3 pointed out that SEZ benefits are not felt by the communities from the immediate environment. This observation was also supported by Respondents 10 and 12, they outlined that most of those jobs that they created are from construction of the SEZ Additionally, Respondent 12 also questioned whether significant empowerment of local communities was taking place within the SEZ.

4.3.3.2.2. Economic dimension

All respondents identified that SEZs can support the economic dimension of SUD in various ways. For example, respondents who had a high degree of association with

SEZ in their duties and were directly linked to TASEZ, identified that SEZs can act as growth stimulants for new industries.

Under the economic domain, a few respondents (4 of 13) shared that SEZs could provide opportunities for local SMMEs through preferential procurement within the different construction phases of the SEZs. In addition, 2 of the 13 respondents also recognised that SEZs could be catalysts for the development of economic corridors and the transformation of urban areas into urban manufacturing hubs where the city itself is one big SEZ. Respondent 6 expanded in the following manner:

> *"You see, in other countries like China or South Korea, the entire city or province is a zone. So, they don't sit, they don't create miniature parks like we have* [a legacy of] *our apartheid model. For example, you have Shenzhen an entire city which is a Special Economic Zone"*

All the interviewed participants from the CoT had the common perception that urban spaces need to have economic spaces and to this end, SEZs were identified as complementing levers for developing the economic sphere of urban areas.

In a different light, one respondent directly involved with TASEZ observed that the SEZ incentives scheme is not complementary to the SEZ development trajectory, which can be a threat to attracting investors.

4.3.3.2.3. Environment

In terms of the environment, interviewees noted that SEZs are often the culprits of environmental degradation, but that there is also a positive role that SEZs can play towards supporting the environmental ambitions of hosting urban areas in view of SUD. A shared view held by Respondent 5 and 12 was that SEZs could facilitate SUD by complying with environmental authorisation licences such as environmental impact assessments and water use licences.

Additionally, a few interviewees (4 of the 13), reported that the adoption of cleaner production processes such as the installation of solar panels and encouraging SEZ tenant firms to adopt environmentally friendly manufacturing practices could assist

SEZs to reduce their negative effects towards the environment. Three respondents also recognised that SEZ tenants were critical role players for supporting SEZs in enhancing the environmental domain of SUD. Respondent 5 had the below to share:

> *"[TASEZ has] a tender out for private company to install solar panels on our rooftops so that we can reduce the emissions from the energy that we use, which is coal based"*

4.3.3.2.4. Governance

Regarding governance aspects, during the interviews it was recognised by several respondents that SEZs can support urban governance measures because they can be used to test areas and speed up regulatory aspects by streamlining legislative processes for prospective investors. In addition, 8 of the 13 respondents noted that SEZs could be areas of promoting good governance. The importance of leadership as part of good governance was acutely highlighted by Respondent 4, who shared the below:

> "*Their governance also plays a role, the vision has to start from the leaders and the leaders have to provide leadership and, provide compliance, compliance in terms of ensuring that whatever resource that they're deploying to execute the SEZ activities. Those resources are managed effectively and in compliance with all these other applicable legislations, the designs and the construction of those facilities, the compliance with environmental legislations and are not harmful to the society in terms of their social needs."*

A few respondents also identified that from an urban planning perspective, SEZs could support the reversal of apartheid spatial planning and address aspects of urban sprawl. Respondents recognised the importance of SEZs to be reflected in the respective Spatial Development Framework of the hosting urban area.

4.3.3.3. Resources and support required for SEZs to facilitate SUD

Notably, 7 of the 13 respondents shared that the there is a gap in the availability of information resources or resources to inform the efforts SEZs on how to contribute to SUD / any of its pillars in hosting urban areas. Despite this gap, a few interviewees recognised that SEZs can review respective urban plans such as Regional Spatial

Development and precinct plans to understand the priorities of the municipality. During the interviews, most respondents identified limited financial resources as a key hindrance towards the contribution of SEZs to the SUD / any of its pillars in hosting urban areas. In a contrasting view, one respondent identified that SEZs are well resourced financially and in terms of human capital, however their mandate has never accommodated the aspect of SUD.

Few respondents identified that for SEZs to contribute towards SUD ambitions of the hosting urban area it is important that they are context relevant and are rooted in the local community. In view of this, Respondent 12 had the following to share:

> *"So, they should be rooted in communities via relevant community-based organisations so, whatever is there in terms of institutions to facilitate that, should bear in mind the fact that the agenda should be relevant to context, I will leave it at that."*
> Respondent 12

Furthermore, 3 of the 13 respondents identified fragmented planning as a key barrier of SEZs contributing towards SUD. Some respondents also identified that the Project Management Office at the Industrial Development Cooperation that was established to support lagging SEZs with their performance could be expanded to support the contribution of SEZs to the SUD ambitions of hosting urban areas.

Respondents 5 and 12 both mentioned the need for partnerships between key stakeholders, including academic institutions, businesses, and local communities. Respondent 12 acutely expressed this observation in the following manner:

> *"Partnerships between key stakeholders. I am talking about academic institutions, business, business bodies, local government, provincial governments, you name them and at the heart of it must be the communities to make sure that they are speaking to one another, they are speaking the same language, so that nobody pulls a different direction*"

4.3.4. TASEZ and facilitating SUD

In this section, responses from only seven participants were used because of their direct involvement with the Tshwane SEZ.

4.3.4.1. Interaction between CoT and TASEZ

On the aspect of interaction, all respondents noted that the TASEZ and CoT interact at different levels. Firstly, all respondents noted that TASEZ and CoT interact at the ownership level where the CoT is an equal shareholder of the TASEZ. The CoT owns one third of TASEZ and the remaining two thirds are equally shared between provincial government represented by the Gauteng Growth and Development Agency and national government represented by **the dtic**. To solidify the shared ownership of TASEZ, a partnership agreement was signed by the three institutions and outlines the respective roles and duties.

Two respondents noted that CoT and TASEZ are also connected at the governance level as the CoT forms part of the board of the SEZ. The SEZ Advisory Board functions as the regulatory oversight institution, which is accountable to the Minister of **the dtic**. Additionally, respondents from CoT noted that the municipality is also represented in some of the Board Committee structures through the EPMU unit that was created by the TASEZ advisory board.

Despite the presence of clear governance mechanisms to facilitate interaction, a few respondents pointed out that the interaction between CoT and TASEZ has not been without its challenges. One of the challenges has been the turnover of CEOs at TASEZ. Linked to the leadership aspect, one respondent mentioned that some of the decision makers within the CoT were risk averse and as a result, processes took longer to be decided upon. One respondent also identified that the placement of the city under administration affected spending and the ability of the City to fulfil its duties in line with the signed agreement. Two respondents recognised having the CoT as an equal shareholder to TASEZ had a positive effect as it facilitated greater interaction and a closer working relationship between CoT and TASEZ.

4.3.4.2. TASEZ and SUD

As part of the interview, respondents were asked about TASEZ's level of contribution towards SUD, only Respondent 5 answered this question. As part of their response, they outlined that there were various avenues within which the notion of SUD informs TASEZ duties. They outlined that environmentally, TASEZ had to seek environmental authorisation in the form of an EIA to commence with the clearing and construction of the SEZ structures as well as green energy. Additionally, they reported that the SEZ master plan, which outlines the development phases of the SEZ was developed under the basis of smart city ideals to embed the ambition that the SEZ could be an urban feature that also promotes the image of a city where people cancan work, play and live.

4.3.4.3. Shared understanding between CoT and TASEZ on supporting SUD goals

Some respondents perceived there to be no shared understanding as to how TASEZ contributes towards SUD. Notably, two respondents pointed out that tenants of the SEZ like Ford could be inadvertently supporting the SEZ contribute towards SUD as they are engaged in cleaner production processes such as solar panel installation. This reduces the impact of TASEZ tenant firms on the national grid which is mostly coal powered. In addition, 2 out of the 7 respondents recognised that part of the reason for a lack of a shared understanding of how the TASEZ is contributing towards the CoT SUD targets is because City officials have a limited understanding of TASEZ and the shared ownership role of the SEZ. To underscore this aspect, respondents made the following remarks were made by Respondent 2 and 4:

> *"It's only the people that are involved with TASEZ that really know. As I'm saying, if you ask anyone who is not involved, they wouldn't know, and I only knew because I got involved, and* [worked] *on a daily basis on the SEZ [TASEZ]. So if the people are not involved within the city, unfortunately, they wouldn't know about it, you know. So, perhaps there hasn't been enough awareness, because even if you need different parties within the city to talk about simple approvals of processes, approval of documents and budgets and all those things, you need to convince them, I mean payment of invoice, you need to convince them hard,* [that] *we need the SEZ, let's enable the SEZ*." Respondent 2

> "*Yeah I would say not to that extent, there is a shared understanding now that people can see the value of TASEZ, but it is not something I can say initially people showed the value or understanding would come as a result of seeing the value of this initiative, but now there is a shared understanding, not 100% cause even now we still have to go and justify*"
> Respondent 4

While implicit, TASEZ's expected contributions to SUD are not always explicitly communicated or universally understood across CoT. Thus, an opportunity exists to jointly articulate and institutionalize how TASEZ can advance CoT's sustainability objectives as the initiative matures.

4.3.4.4. Required support by TASEZ to facilitate SUD

Respondent 7 identified that it would have been easier for TASEZ to facilitate SUD if this factor was fully embedded during the planning of the SEZ. However, they also noted that it is integral for SUD to be a "*central theme in the conceptualisation of SEZ*". It was noted by one Respondent that the SEZ should engage with academia and research institutions such as the University of Tshwane, the CSIR and the University of Pretoria for assistance towards facilitating SUD.

Respondent 13 recognised that socially, TASEZ could benefit from fostering a social contract between the SEZs and surrounding communities. Environmentally, the respondent recognised that the SEZ could have an environmental strategy and plan. From the economic front, the respondent identified that the SEZ must within its evaluation of the potential investors, integrate aspect of environmentally sustainable development. Most respondents also recognised that there are certain reviews or reforms that need to be undertaken from the CoT in order to support the TASEZ's contribution towards the SUD. Among these are the review of the Regional spatial Framework and the master plan of the city. The majority of respondents noted that there needs to be greater collaboration between TASEZ and CoT on SUD related interventions.

Respondent 2 expressed that "*We* (CoT) *must go back to the long-term vision and see how TASEZ can be linked*". This emphasizes the need to align TASEZ with the City's long-term vision in order to better position TASEZ as a strategic contributor to SUD.

4.3.5. Policy and governance reforms as well as success factors for SEZs towards SUD

4.3.5.1. Policy and governance reforms

Nearly all respondents agreed that policy reforms are needed in the SEZ Act and local government domain to enable the better integration of SEZs with SUD objectives. Respondents noted that the current legislation on SEZ does not make mention of urban areas or SUD. To this end, it was recognised that the SEZ policy in its current form does not provide provisions for SEZs to contribute towards SUD in hosting urban areas. The Act focuses more on the process of establishing SEZs rather than their integration with host cities. It lacks provisions on how SEZs should strategically locate and link with the local socio-economic context and attributes of the urban environment.

Notably, Respondents 2 and 4 both mentioned that the SEZ policy does not have to be the only policy that stipulates the duties of SEZs towards SUD and that there could be other legislative frameworks or statutes, such as municipal by laws. Respondents suggested that the Act could be amended to include the local municipality or hosting urban area as a shareholder of the SEZ. The reason for this, as expressed by one respondent directly involved with the TASEZ, is that the development of SEZs happens at a local level within the spatial boundaries of the municipality and to this end, the municipality needs to be part owner of the SEZ.

One respondent also identified that the incentives, policies and allocations need to be revised so that they are accessible to investors. Linked to investors, another respondent identified that the SEZ Act needs to be reviewed to provide broader detail to investors. Additionally, most respondents noted that a review of the SEZ Act is needed in order to reposition SEZ as economic development agencies of regions that broadly address SUD.

Further to the provisions that need to be outlined in the SEZ Act towards SUD and hosting urban areas, a respondent directly involved in TASEZ outlined the below key governance gaps when it comes to the prioritization of SEZ

> *"We need to have structures that speak to each other, we need to have local government taking control. We need to have; citizen participation, community engagement, organised civic participation, we need to have these SEZs becoming owned by the communities and the direction in which they go must be determined also by local communities, that way they will remain relevant to the local context"*
> Respondent 8

Respondents highlighted several governance issues preventing SEZs from optimally contributing to SUD. Firstly, the lack of coordination and integration between the three spheres of government (national, provincial, local) in jointly planning, implementing and governing SEZs. Secondly, the limited community and stakeholder participation in the design and benefits of SEZs. Furthermore, the poor utilisation of SEZs as local economic development and spatial transformation tools. Lastly, the failure to tailor SEZ incentives, technologies and training to address the socioeconomic needs of host regions.

4.3.5.2. Success Factors

All respondents who are directly linked to TASEZ agreed that a key success factor was the equal shareholding and representation in governance structures making the city a custodian or key stakeholder within the SEZ. A few respondents provided rich insights on what SEZs need to do to become real catalysts for SUD, namely developing strong relationships and a social compact with strategic local partners - municipalities, communities, businesses, universities, civil society forums. Two respondents also shared that it is important to ensure that the necessary bulk infrastructure and logistics connectivity are in place in the wider urban region to make the SEZ function optimally.

Another key success factor mentioned by five respondents was the need to build an empowered, capacitated leadership and governance structure representing all key

stakeholders to drive the SEZ. The adoption of green technologies and renewable energy was also mentioned as a key success factor by four respondents whose duties are highly linked with SEZs. Two respondents also pointed out the need to tailor SEZ incentives to increase interest and investment in activities that foster inclusive growth.

Respondents 12 and 13 had the following to share:

> "*For it to be deemed successful, the SEZ model should be able to link all the resources and stakeholders within the locality and it must be able to improve the standard of living while creating jobs in a sustainable way and growing industries in a sustainable way, and the heart of it all should be innovation, entrepreneurship, should open the way for a better life for locality."*
> Respondent 12

> "*I think, the second thing for me is to have a clear strategy, strategy around society, , how you going to develop the local community, or at least support the local community and integrate them into your value chains, the social cohesiveness of that so that you not going to be, once you put a spade into the ground that the local community come and stop you."*
> Respondent 13

4.4. Analysis of research results

The purpose of this section is to present the analysis of the research results regarding the role of SEZs in facilitating SUD. A thematic analysis approach was adopted because it facilitates the triangulation of research findings from interviews and document analysis. Additionally, the method supports the identification of patterns within datasets to extract meaningful insights. The research results consisted of the research results from the document analysis and the interviews.

4.4.1. Interaction between SEZs and urban areas as related to SUD

This section draws from both the key informant interviews and the document analysis to present a thematic analysis of the interaction between SEZ and urban areas. Four themes have been identified as illustrated in Table 3 below. The themes were

identified based on the number of times each specific code appeared in the interview data and in the documents reviewed. Each theme provides insights on the characteristics and crucial factors that facilitate or hinder the relations between SEZs and urban areas.

Table 3: Interactions between special economic zones (SEZs) and urban areas.

Theme	Codes
Economic Development	economic growth, job creation, industrialization
Urban Integration	integrated land use, work-live-play, social issues
Stakeholder Engagement	communication, strategic partners, community involvement
Planning Alignment	integrated planning, IDP alignment, zoning, intergovernmental governance, coordinated governance

4.4.1.1. Economic Development

Economic development emerged as a key theme for understanding the relationship between SEZs and urban areas. This is significant as it underscores the role of SEZs as catalysts for urban economic growth and illuminates the extent to which SEZs can facilitate improvements in the economic wellbeing of people in hosting urban areas. Interview data revealed a strong emphasis on the role of SEZs as drivers of employment creation, economic growth, and industrial activity. In particular, Respondent 5 emphasised that SEZs enabled the broadening of economic participation by bringing in local suppliers. This perspective was echoed in policy documents, with the COT's IDP TASEZ as a key component of its economic development strategy.

Despite the positive attributes of the interaction of cities and urban areas, there are obstacles in guaranteeing that the desired economic benefits are successfully distributed to the hosting communities surrounding the SEZs. For example, a few respondents expressed apprehension regarding the level of community involvement in the context of economic development and industrialization efforts. Respondent 12

specifically noted that they "*don't see anywhere where there is much of mention of community involvement but communities as recipients of development and as recipients for jobs"*. This suggests that the economic objectives of SEZs may be narrowly focused on attracting investments and promoting industrial activities, without adequately considering the integration and empowerment of local communities beyond the view of being beneficiaries.

To address this challenge, it is crucial to adopt a more inclusive approach that recognizes the hosting urban communities as vital stakeholders in the development and operation of SEZs. By actively including local communities and aligning economic objectives with their needs and aspirations, SEZs can contribute to sustainable and equitable economic growth. The establishment of the Community Project Committee (CPC) by TASEZ and representatives from nearby communities ensured the involvement of local communities in the economic opportunities emerging from the SEZ (TASEZ, 2023). This endeavour represents a deliberate attempt from the SEZs to ensure a clear productive benefit and impact to the surrounding community.

4.4.1.2. Urban Integration

The theme of urban integration emerged as a critical factor for understanding the relationship between SEZs and urban areas. Interview data revealed that most participants strongly believed that SEZs could contribute towards integrated urban spaces where people can work, play and live. Respondent 4 articulated this aspiration by stating that it is very important for SEZs to interact with the urban area so that a more integrated type of industrial use or integrated land use can be created, where people can work, play and stay. This vision of SEZs as catalysts for holistic urban development aligns with contemporary urban planning principles that prioritize mixed-use, liveable spaces. Notably, the development of SEZs has in the past been likened to the development of islands of industrialisation, which can undermine the goal of urban integration.

However, the contribution of SEZs towards urban integration is not always a guaranteed outcome. The document analysis revealed that while TASEZ's location bordering existing industrial and residential areas was intended to promote spatial integration, there is limited evidence of comprehensive strategies to ensure a

seamless integration with the surrounding urban fabric. This suggests that there is a need for more intentional and strategic approaches to urban integration in SEZ planning and development. This integration should also be inclusive of all relevant stakeholders, including local authorities, urban planners, community representatives, and industrial partners such as SEZ tenant firms or local universities. Respondent 13 reinforced the importance of considering the broader urban context when developing SEZs, stating that *“an SEZ is never developed in isolation, what is important is that you engage and interact with existing businesses in and around the SEZ, it is also important that you interact with the municipal structures where you are going to reside*".

Effective urban integration can contribute to addressing social and economic issues by providing employment opportunities in close proximity to residential areas, reducing commuting times and costs, and promoting a sense of community ownership and pride. It can also facilitate the efficient utilization of shared resources and infrastructure, such as transportation networks, utilities, and social amenities, leading to cost savings and environmental benefits.

4.4.1.3. Stakeholder Engagement

Effective stakeholder engagement is crucial for coordinated development and planning between SEZs and their hosting urban areas. This analysis highlighted the importance of inclusive engagement and the challenges in achieving it effectively.

Interview data revealed that the equal shareholding model between the CoT, **the dtic,** and GPG in the TASEZ facilitates cooperative governance and engagement between the three spheres of government. Additionally, this also translates to a smoother working relationship in order to reduce the effect of bureaucratic processes. Notably the engagement was facilitated through the representation of the CoT in the board of TASEZ as well as in the board committees. This suggests that stakeholder engagement is not an organic process and needs to be assisted through plans for engagement.

Despite strides in SEZ governance, community engagement remains a challenge, with most interviewees expressing that communities are not regarded as crucial

stakeholders in the context of SEZ development. This observation suggests a gap between the rhetoric of inclusive development and the reality of SEZ governance practices. Document analysis provided some evidence of efforts to address this gap. For instance, TASEZ's establishment of a board committee focused on community engagement represents a step towards more inclusive engagement.

From the above it is clear that inclusive stakeholder engagement both vertically and horizontally is integral for ensuring that SEZs are rooted in the hosting urban area. The practice therefore requires investments in diverse levers and platforms. Effective stakeholder engagement can yield numerous benefits, such as increased community buy-in and support for the SEZ initiatives, reducing potential conflicts and resistance.

4.4.1.4. Planning Alignment

The theme of planning alignment highlights the importance of ensuring that the development and operation of SEZs are in harmony with the broader urban planning frameworks and strategies of the hosting municipalities or provinces. Respondent 12 emphasizes this point, stating local government planning should speak to SEZ planning. However, a few respondents noted that there is room for improvement in relation the alignment of local and SEZ planning. This suggests that in many cases, there is a disconnect between the planning processes for SEZs and the broader urban development plans, which can lead to conflicts, inefficiencies, and missed opportunities for synergies.

The document analysis corroborated this finding. While policy documents like the City of Tshwane's IDP mention TASEZ, there was limited evidence of a comprehensive integration between SEZ plans and broader urban development frameworks. To address this challenge, it is crucial to foster close collaboration and coordination between the relevant authorities responsible for SEZ development and urban planning. By ensuring that SEZ planning is integrated into the broader urban planning frameworks, such as IDP, several benefits can be realized such as the efficient utilization of resources and infrastructure as well as socio-economic objectives.

In summary, while interactions between SEZs and hosting urban areas are essential for achieving economic development, urban integration, stakeholder engagement, planning alignment, infrastructure provision, and skills development, there are notable challenges in realizing these goals. To tackle these issues and optimise the possible benefits, effective collaboration, communication, and alignment between various stakeholders are necessary for both the zones and the hosting urban areas.

4.4.2. SEZ nature and functions as related to SUD

A total of six themes were identified as part of understanding the nature and functions of SEZs as related to SUD. The themes were identified based on the number of times each specific code appeared in the interview data of the respondents and from the documents reviewed.

Table 4: Special economic zone (SEZ) nature and functions as related to SUD.

Theme	Codes
Environmental Sustainability	environmental impact; renewable energy; mitigate pollution; climate resilience; eco-industrial development
Social Development	social impact, community engagement; job opportunities; SMME opportunities; spatial integration
Economic growth	economic hub; industrial development; investment attraction; infrastructure development; value chain
Governance and Regulation	integrated planning; compliance and legislation; streamlined processes; partnerships and collaboration; policy alignment
Capacity and Resources	knowledge and skills; financial resources; support structures
Perceptions of Sustainable Urban Development	holistic approach; long-term perspective; balance of pillars

4.4.2.1. Environmental sustainability

The theme of environmental sustainability emerges as a critical consideration in the development and operation of SEZs as linked to the facilitation of SUD. Data retrieved from respondents and the document analysis highlight the responsibility and

increasing opportunities for SEZs to foster sustainable development practices and mitigate environmental impacts in the hosting urban area.

For SEZs to contribute towards environmental sustainability, compliance with the respective environmental legal framework was recognised as paramount. This demonstrates that legislation is a basic but significant step towards environmental sustainability. The SEZ environmental management plan according to NEMA can also be a guiding mechanism for balancing development and environmental sustainability.

Although compliance with environmental legislation emerged strongly, the document analysis revealed that there was limited mention of the relationship between environmental factors and SEZs, particularly in the SEZs Act. The implication of this could be poor prioritisation of environmental requirements within SEZ.

The research results highlighted that SEZs can contribute towards environmental sustainability by leveraging green manufacturing practices and eco-industrial development. Respondents recognised that SEZs, both at site wide and park tenant level, can integrate renewable energy sources, such as solar panels and explore green hydrogen-generated electricity in order to reduce reliance on fossil fuel. Given the high energy demand within economic zones, a transition towards renewable and green economic development practices would positively contribute towards the urban greening efforts of hosting urban areas.

The theme of environmental sustainability also emerged because the concept of urban heat island as a result of industrial activity was mentioned by respondents. This underscores the notion that SEZs could have negative effect on urban climatic conditions. Notably, the adoption of cleaner production processes within SEZ as well as ensuring green spaces within SEZs could reduce the urban head island effect.

4.4.2.2. Social development

The theme of social development underscores the importance of considering the impact of SEZs on local communities and promoting social inclusivity as linked to SUD. The theme emerged because most respondents highlighted the need for active community engagement, ensuring that a symbiotic relationship between SEZs and

hosting community, where community members are more than passive beneficiaries. From the document analysis, it became clear that significant steps could be undertaken by SEZs to promote social development through the creation of job opportunities and support for SMMEs from the surrounding community.

The above provides insight into the positive effects of SEZs towards social development. It is worth mentioning, however, that there is a risk that without careful consideration, SEZs could exacerbate existing social inequalities rather than alleviate them. This aspect needs to be fully considered given that SEZs in South Africa typically follow the enclave model with limited interactions with host communities. Additionally, the sustainability of jobs created by SEZs requires assessment as most are created during construction rather than aimed at long-term employment through industrial employment. Therefore, realizing the potential social development benefits of SEZs requires proactive measures to address potential negative impacts.

4.4.2.3. Economic growth

The theme of economic growth emerged due to the fact that SEZs are considered prominent contributors towards a variety of factors linked to urban economic development such as infrastructure development, innovation and investment hubs, job creation, productivity, and business development.

Research results highlighted that SEZs can be strategic tools for attracting foreign investments, stimulating domestic investments through local supplier initiatives as well as promoting industrial development. On the one hand, this is good as increases the GDP and tax revenue collection base for the city. However, on the other hand, it can create a skewed economic outlook provided the investments are concentrated on the SEZ with poor linkages to the domestic environment. This indicates that for SEZs to provide holistic economic growth that contributes towards SUD, it is integral that there are linkages with the domestic environment. Notably, most respondents noted a lack of local supplier integration in certain SEZs.

The document analysis revealed that the presence of SEZs comes with increased infrastructure investments that can also to be beneficial to the areas outside the SEZ Notably, within urban areas the infrastructure investments such as roads and bulk

water are the duty of the municipality. As a result, it is integral that the municipality also has the financial means to maintain the infrastructure. This suggests that the infrastructure investments brought about by the SEZ must also be coupled with operation and maintenance budgets, especially for the areas that are outside the zone development.

Some limitations were also noted regarding contributions of SEZs towards economic growth within the context of SUD. For example, there is a need to better align the urban development initiative with SEZ policies. Additionally, there was the recognition that there are sometimes poor linkages between SEZs and local supply chains. Some respondents questioned the effectiveness of SEZs in driving broad-based economic growth.

SEZs are widely seen as drivers of industrial transformation, job creation, and regional economic development, highlighting the theme of economic growth. Nevertheless, it is crucial to achieve a harmonious equilibrium between economic objectives and other vital elements of SUD, including environmental sustainability, social inclusivity, and efficient governance.

4.4.2.4. Governance and regulation

The theme of governance and regulation emerged as a critical enabler for the successful implementation and contribution of SEZs towards SUD. Research results from the interviews highlighted the significance of integrated planning between SEZ and urban governance mechanisms. This indicates that there is an intrinsic link between the urban area and SEZ development. Furthermore, in order to reduce a disconnect in priority setting, planning mechanisms should be harmonised. Notably a harmonisation at a governance and planning level does not guarantee coordination at a practical level.

An institutional framework consisting of the three spheres of government was highlighted as a conducive feature for streamlining processes, reducing bureaucratic hurdles, and facilitating efficient decision-making across all stakeholders. It was highlighted as key for ensuring coordinated engagement of stakeholders.

Regulatory frameworks are considered essential for ensuring that SEZs adhere to environmental standards, social responsibilities, and economic objectives. Respondents highlighted the need for strong leadership, compliance with applicable laws and regulations, and the alignment of policies across various levels of government to create a cohesive and supportive environment for SEZ development.

Moreover, the establishment of partnerships and collaboration among various parties, such as governmental organisations, private enterprises, and community groups was acknowledged as a vital component of effective governance. These collaborations promote the exchange of knowledge, the mobilisation of resources, and the incorporation of various viewpoints, ultimately enhancing decision-making processes that are well-informed and inclusive.

In addition, respondents recognised the difficulties caused by the absence of policy coherence and coordination in South Africa's governance framework. The lack of alignment between SEZ initiatives and urban initiatives can impede their effective implementation and coordination. This emphasises the importance of making concentrated efforts to streamline policies and establish a coherent regulatory framework.

The central theme of governance and regulation highlights the crucial importance of strong leadership, resilient institutional structures, and cooperative decision-making in attaining sustainable and efficient development of SEZs. Efficient governance mechanisms are crucial for maintaining a balance between economic priorities, environmental concerns, social inclusivity, and long-term sustainability.

4.4.2.5. Capacity and resources

Results from the interviews revealed that most respondents acknowledge the existence of knowledge gaps, particularly at the local level, as pertaining to SEZ and municipal officials in relation to the contribution of SEZs to SUD. This highlights the need for capacity building and access to relevant expertise to mentor and expose officials on how to support SUD within SEZ domain. Financial resources were identified as a crucial enabler, as the development and maintenance of SEZs initiatives

linked to SUD requires substantial input investment particularly within infrastructure, utilities, and support services. Respondents recognized the challenges posed by limited financial resources, which can hinder the ability of municipalities and other stakeholders to provide the necessary support and resources.

Moreover, there was a strong emphasis on the significance of creating support systems and teams of experts. These support structures are essential for addressing knowledge gaps, offering guidance on the most effective methods, and facilitating the incorporation of local expertise and context-specific factors into the planning and implementation processes for SUD initiatives.

Respondents also emphasised the importance of utilising local expertise and knowledge, especially in areas where there may be a scarcity of skills and resources. This involves cultivating collaborations with educational institutions, community-based organisations, and local enterprises to guarantee that the development of SEZs and SUD initiatives is in harmony with the distinct attributes and requirements of the neighbouring communities.

The central theme of capacity and resources highlights the crucial significance of investing in a capacity trifactor, namely knowledge acquisition, financial assets, and support systems to support effective execution and functioning of SEZs towards SUD. To overcome the related capacity challenges, it is important to implement specific initiatives that focus on building capacity, mobilising resources, and incorporating local expertise.

4.4.2.6. Perceptions of sustainable urban development

Perceptions on SUD emerged as a theme due to the diverse perspectives and understandings of this concept among respondents. Most respondents emphasized the need for a holistic approach that balances environmental, social, economic, and governance aspects while considering the long-term implications of urban development. This indicates that SUD is concept that is understood within the frame of sustainable development. Notably respondents did not share how they practiced

SUD within their respective portfolios, indicating that there is a disconnect between duties and SUD practices.

The coexistence of economic development and environmental protection is highlighted as a fundamental principle, recognizing the need to mitigate the environmental impacts of economic processes and promote eco-friendly practices. Respondents stressed the importance of integrated planning and stakeholder participation in shaping liveable and sustainable urban environments.

Furthermore, the concept of liveability was introduced, emphasizing the need for urban development initiatives, such as SEZs, to contribute to the creation of vibrant, inclusive, and desirable living environments. This includes considerations for social amenities, recreational spaces, and the overall quality of life for residents and workers within and around the SEZs.

The theme of perceptions of SUD reflects the multifaceted nature of this concept and the need for a balanced approach that considers the interplay between economic, social, environmental, and governance factors. By fostering stakeholder participation, promoting liveability, and embracing innovation, urban development initiatives, such as SEZs, can contribute to the creation of sustainable and thriving urban environments that meet the needs of present and future generations.

4.4.3. TASEZ and SUD

This study investigated the relationship between TASEZ and SUD.". Table 5 below identifies five thematic areas for analysing the contribution of TASEZ to SUD. The themes were identified based on the number of times each specific code appeared in the interview data and from the documents reviewed.

Table 5: The Tshwane automotive special economic zone (TASEZ) and sustainable urban development (SUD).

Theme	Codes
Institutional Arrangements	Intergovernmental relations, governance structures, board representation, subcommittees

Collaboration and Coordination	joint planning, regular meetings, information sharing, shared understanding
Sustainable Urban Development	environmental considerations, community integration, renewable energy, economic development
Decision-making and Bureaucracy	approval processes, risk aversion, political dynamics, leadership changes

4.4.3.1. Institutional arrangements.

The theme of institutional arrangements strongly emerged from the interviews and document analysis. This reflected the significance of establishing formal structures and mechanisms to govern the relationship between the TASEZ and the CoT. This theme manifested through discussions around intergovernmental relations agreements, governance structures, board representations, and subcommittees.

The establishment of an Intergovernmental Relations Agreement was repeatedly highlighted as a foundational element that delineated the roles, responsibilities, and ownership stakes of the three spheres of government involved: national, provincial, and local government (CoT). This agreement served as a critical governance instrument, outlining the specific contributions and obligations of each stakeholder in the development and operation of TASEZ.

Furthermore, respondents emphasized the importance of governance structures, such as the establishment of a board and various subcommittees, to oversee and manage different aspects of TASEZ's operations. These structures facilitate decision-making, oversight, and coordination among the stakeholders, ensuring that their respective interests and responsibilities are represented and addressed.

The significance of this theme lies in the recognition that complex, multi-stakeholder projects like TASEZ require robust institutional arrangements to navigate the intricate web of interests, priorities, and obligations. Without clearly defined governance instruments and structures, the potential for misalignment, miscommunication, and conflicts of interest could hinder the smooth operation and development of the SEZ.

By establishing these arrangements from the outset, stakeholders aimed to create a framework for collaboration, accountability, and efficient decision-making processes.

However, the mere existence of these institutional arrangements does not guarantee their effectiveness. As some respondents noted, challenges have arisen due to factors such as leadership changes, political dynamics, and differing priorities among stakeholders over time. Continuous efforts to maintain alignment, foster communication, and adapt these arrangements to evolving circumstances will be crucial for the long-term success of TASEZ and its contribution to SUD goals.

4.4.3.2. Collaboration and coordination

Collaboration and coordination surfaced as a critical aspect in the interaction between the TASEZ and the CoT. This theme encompassed elements such as joint planning, regular meetings, information sharing, and cultivating a shared understanding among the various stakeholders involved.

Respondents acknowledged the importance of fostering a collaborative approach and coordinating efforts to achieve the desired outcomes for TASEZ and the city's SUD goals. Regular meetings and information sharing within the board committees were highlighted as essential for facilitating collaboration and coordination. Although regular meetings occur, data from the interviews revealed that there was no uniform or commonly shared understanding between SEZ and CoT official on SUD and the facilitative role of the TASEZ towards SUD objectives.

This theme underscores the role of collaborative platforms for supporting engagements across multiple stakeholders. Without effective collaboration and coordination mechanisms in place, the risk of misalignment, duplication of efforts, or conflicting decisions could undermine the overall success of SUD initiatives.

4.4.3.3. Sustainable urban development

SUD emerged due to respondents' mention of environmental considerations, community integration, renewable energy initiatives, and economic development. Respondents acknowledged the importance of aligning TASEZ's operations with the city's SUD goals and related sustainability objectives. Despite willingness, it was noted

that there is not a shared or common understanding of the CoT's SUD goals and how the TASEZ can contribute to these. The theme also emerged because it was mentioned that the CoT has established institutional structures and mechanisms to address SUD considerations, which should inform and guide the development of TASEZ.

The significance of this theme lies in the recognition that the development and operation of TASEZ should not be viewed in isolation, but rather as an integral component of the city's broader SUD goals. By considering environmental impacts, community integration, renewable energy initiatives, and economic development opportunities, TASEZ can potentially contribute to the overall sustainability of the city.

4.4.3.4. Decision making and bureaucracy

Decision-making and bureaucracy emerged as a theme, encompassing the challenges associated with approval processes, risk aversion, political dynamics, and leadership changes. Respondents highlighted instances where decision-making processes were hampered by bureaucratic hurdles, risk aversion, and shifts in political leadership, which could potentially hinder the progress and development of TASEZ.

4.4.4. Policy and governance

The policy and governance mechanisms for SEZ and urban areas are integral for understanding the pathway towards SUD. Table 6 below highlights the six themes that emerged. The themes were identified based on number of times each specific code appeared in the interview data and from the documents reviewed.

Table 6: Policy and governance.

Theme	Codes
Policy and Regulatory Reform	SEZ policy review, municipal bylaws alignment, legislative changes, policy gaps, policy reforms
Integrated Planning and Stakeholder Collaboration	urban context consideration, economic infrastructure linkages, stakeholder engagement, community ownership, integrated development

4.4.4.1. Policy and regulatory reform

This theme emerged on the basis that the current SEZ policy and regulatory framework, primarily the Special Economic Zones Act of 2014, lacks adequate provisions to facilitate the integration of SEZs within their hosting urban areas and promote SUD. Multiple respondents acknowledged gaps and shortcomings in the existing policy, highlighting the need for a comprehensive review and update.

Therefore, a well-designed and forward-looking policy framework is crucial for guiding the development and operation of SEZs in a manner that aligns with the sustainability goals of urban areas. Without appropriate policy reforms, SEZs may continue to operate in isolation, failing to contribute meaningfully to the sustainable growth and development of their surrounding communities.

4.4.4.2. Integrated planning and stakeholder collaboration

Integrated planning and stakeholder collaboration as a theme arose based on respondents' emphasis on the importance of considering the specific socio-economic context of the urban environment in which the SEZ is situated. They recognized the need for SEZs to break away from an "island mentality" and actively engage with local communities, businesses, educational institutions, and municipal authorities.

This theme reflects the fact that SEZs cannot operate in silos and must be seamlessly integrated into the broader urban fabric to maximize their potential for sustainable development. Collaboration with various stakeholders ensures that the needs and aspirations of the local community are taken into account, and that the economic infrastructure development within the urban context supports the efficient operation and connectivity of SEZs.

4.5. Conclusion

This chapter presents the research results acquired from both the primary and secondary data sources. In addition, the chapter provides an analysis of the data from the document analysis and key informant interviews. The presentation of research findings and the data analysis are structured according to the research questions.

In terms of research enquiry on the interaction between SEZs and urban areas, the research results reveal a multifaceted outlook, encompassing various themes such as economic development, urban integration, planning alignment. Research results also underscored that while SEZs have the potential to drive economic growth and job creation, challenges remain in ensuring equitable distribution of benefits to local communities. The need for more intentional urban integration strategies and comprehensive stakeholder engagement was highlighted. This is to ensure that benefits of the SEZs are also felt within the domestic economy.

With regards to the nature and functions of SEZs as related to SUD, the document analysis and interview results revealed an overwhelming sentiment that SEZs are fundamentally economic development drivers that can support social development and urban governance endeavours as well as environmental sustainability. The latter can be facilitated through the integration of cleaner production processes and reducing reliance on fossil fuel generated energy. However, interviewees recognised the need for better alignment between SEZ policies and broader urban development initiatives to fully realize these benefits. Additionally, it was noted that there is gap in terms of available resources, namely financial, knowledge and strategic partnerships, which can assists SEZs in their endeavours towards facilitating SUD.

In relation to the TASEZ and its contribution towards SUD, the research results revealed that the presence of institutional arrangements such as committees between CoT and TASEZ facilitated coordinated planning and eased regulatory processes. However, it was clear that there was not a shared understanding as to how the TASEZ can contribute towards the SUD objectives for CoT. This entails that the mere presences of structures does not automatically translate to a harmonised understanding.

In terms of understanding sentiments on policy and governance needs with regards to the role of SEZs towards facilitating SUD, the research results highlight the need for regulatory reform to better integrate sustainability and urban development obligations within the SEZ Act. Currently, the Act does not mention urban areas of cities. Additionally, integrated planning and stakeholder collaboration emerged as critical success factors for supporting SEZs with facilitating SUD.

5. DISCUSSION

5.1. Introduction

A literature review, document analysis and key informant interviews were undertaken to understand the role of SEZs in facilitating SUD in the context of TASEZ. This discussion section serves as a point of convergence for analysing and interpreting the research findings within the context of existing literature and outlines potential implications of the findings. To facilitate a structured discussion section, the three research questions of the study will be utilised.

5.2. How do the nature and functions of SEZs enable sustainable urban development?

The nature and functions of SEZs have the potential to significantly contribute to SUD, but this relationship is complex and multifaceted. The research findings, coupled with existing literature, reveal both opportunities and challenges in leveraging SEZs for SUD.

5.2.1. Economic growth and investment attraction

The research findings indicate that SEZs have a significant potential to drive economic growth and attract investment to urban areas. This enables SEZs to support key aspects of SUD as linked to economic development. To this end there is a strong link between economics of agglomeration to urban morphology, and future urban developments (Song, Guo, & Chen, 2024). Subsequently, this aligns with the literature, which emphasises the role of SEZs as stimulating economic activity, creating employment, and catalysing industrial development (Aggarwal, 2019; Farole & Akinci, 2011; Narula & Zhan, 2019; Bergantino et al., 2025).

The case of TASEZ is proof of the economic impact of SEZs; during the 2022/2023 financial year, the SEZs reported investments of R 4.6 billion, which exceeded forecasts (TASEZ, 2023). This success supports the argument presented by Farole (2011) that SEZs can help overcome investment barriers within the wider economy. Moreover, respondents from TASEZ highlighted those initiatives such as the Centre of Excellence Campus, which will assist with the incubation of black industrialists and

entrepreneurs, demonstrate the potential for SEZs to foster local economic development beyond simply attracting large foreign investors.

Notably, the data analysis also revealed challenges in ensuring equitable economic benefits. Some respondents expressed concerns about whether significant empowerment of local communities was taking place within the SEZ. This reflects debates in the literature about SEZs potentially operating as extractive enclaves with limited linkages to the local economy (Neveling, 2024; Bach, 2011; Farole & Moberg, 2014).

These findings partially confirm the expectation that industrial policy mechanisms such as SEZs can contribute to economic growth and investment attraction as part of SUD. However, the challenges in ensuring equitable distribution of benefits were more pronounced than initially anticipated, suggesting that the mere establishment of an SEZ does not guarantee inclusive economic development. The tension between the role of SEZ towards attracting foreign investment and fostering local economic development was an expected finding, given the ongoing debates in SEZ literature.

The above implies that the development of targeted strategies to foster linkages between SEZ firms and local businesses is needed to maximise on the SEZs contributions to sustainable economic growth. These strategies should be accompanied by regular economic impact assessments that measure not just direct investment and job creation, but also indirect and induced economic effects in the broader urban area. Furthermore, the SEZ incentives and policies should promote inclusive growth that benefits surrounding communities.

5.2.2. Employment generation and skills development

The research findings emphasize the potential of SEZs to create employment opportunities, which is a crucial aspect of social sustainability in urban contexts. However, the nature and quality of these jobs is something that requires further investigation. The reason for this is that while SEZs can provide much-needed employment, sometimes these employment opportunities are short-lived and are only available during the construction phase. In addition, long-term companies located

within the SEZ often import skills. Additionally, there are concerns about labour standards, job security, and the potential for exploitative practices. As highlighted by Chen (2018), SEZs often rely on low-skilled, low-wage labour, which may not contribute significantly to long-term human capital development or social mobility. Additionally, several researchers have noted that there have been severe hardships for workers in zones particularly female and children. (Neveling, 2024; Song, et al. 2024; Alkon, 2018).

On a more positive note, some respondents pointed to the potential of SEZs to foster skills development and knowledge transfer. This aligns with more recent conceptualizations of SEZs as hubs for innovation and learning, as discussed by Zeng (2021). The challenge lies in designing SEZ policies and governance structures that prioritize skills upgrading, technology transfer, and linkages with local educational institutions. Such an approach could enhance the contribution of SEZs to human capital development; a key component of SUD as linked to social sustainability.

The research did not interview the tenants of TASEZ. As a result a particular point which would have been interesting to asses is the level at which workers coming from the surrounding SEZ communities possess the skills needed to work at the SEZ. This is a crucial aspect of understanding the readiness levels of the enabling ecosystem within the City and how it supports the SEZs in contributing towards SUD in order for the symbiotic relationship between SEZs and city is mutually beneficial.

According Hamann & Horn (2022) the CoT at a neighbourhood level faces enduring spatial legacies of socio-economic status and segregation. There is a strong mutually reinforcing relationship between median household income, unemployment levels and concentrations of tertiary education qualifications which constitute underlying influences on socio-economic inequality and segregation. The spatial distribution of residents with Grade 12 as their highest education qualification is relatively even, but some disparities are present and only about 10% of the CoT residents have tertiary education qualifications (Hamann & Horn, 2022). This means that for low entry and low skilled jobs neighbourhoods around TASEZ would be sufficient for labour supply however, for higher and more skilled work or professional services, these may need to be imported elsewhere.

In a similar case at Ceoga, Chongsheng (2024) reported some firms operating in the SEZ conducted their own training for candidates as the one offered through the Ceoga Academy and surrounding technical vocational training colleges did not meet their requirements. This points towards a need to ensuring that there must be greater connections between SEZs and educational facilities avialable in the ambient community.

5.2.3. Environmental sustainability and green innovation

The research findings revealed a growing recognition of the role of SEZs in environmental sustainability, a key pillar of SUD. Respondents highlighted initiatives like renewable energy adoption, such as the installation of solar panels at TASEZ. This aligns with literature on the emergence of eco-industrial parks and green SEZs (Gong et al., 2017; Grant et al., 2020). The concept of Economic Zones 3.0, as described by Ahmed et al. (2020), emphasizes the integration of environmentally sustainable green growth with investor-friendly policies. Additionally, it also promotes cleaner productions processes, which minimise risks to humans and the environment (Neto et al., 2020). This is particularly significant in urban areas given the proximity of SEZ and residential areas.

However, tensions remain between industrial development and environmental protection. The literature identifies broader challenges with SEZs and the environment, such as potentially driving increased resource consumption and pollution if not properly managed (Wang, 2013; Xu et al., 2019). The lack of explicit environmental sustainability provisions in the SEZ Act was an unexpected finding, highlighting a significant policy gap. Despite the need for SEZs having to comply with NEMBA, it would have been good to explicitly mention this. In other sectors, such as the mining sector, the Minerals and Petroleum Resources Development Act, 28 of 2002 explicitly mentions that all mining exploration will be in accordance with NEMBA. Additionally, the MPRDA, emphasises the philosophy of sustainable development in relation to mining on which the SEZ Act is silent.

The above signifies that there is an opportunity to enhance the environmental sustainability of SEZs. One way this could be undertaken is to incorporate specific environmental targets and regulations in SEZ policies. Additionally, incentives for green technologies and circular economy practices in SEZs could be provided to increase the adoption of greener production process. Moreover, SEZ tenant firms have a significant role to play in ensuring the transition towards cleaner production processes.

5.2.4. Urban planning and spatial integration

The research results suggest the integration of SEZs into broader urban planning to enable sustainable development is of critical importance. This aligns with literature emphasizing the need to embed SEZs within comprehensive urban development strategies (Wessendorp et al., 2020; Xu & Wang, 2020).

Respondents emphasized the importance of creating “integrated land use, where people can work, can play and can stay”. TASEZ's location bordering the Silverton industrial node and townships such as Mamelodi and Nellmapius was cited as promoting “spatial transformation and urban integration” (TASEZ, 2022). However, challenges remain in fully aligning SEZ and urban planning.

Some respondents observed that there is “room for improvement” in integrating SEZs with city planning processes. The lack of alignment between SEZ planning and local government planning initiatives, echoes the observations of Todes and Turok (2018) regarding fragmented spatial and urban development planning in South Africa. Additionally, it also reflects concerns raised in the literature about SEZs potentially exacerbating urban sprawl and fragmented development if not properly integrated (Farole & Sharp, 2017; Weiss, 2005; Zeng, 2010).

These findings were largely expected, given the known challenges of spatial integration in South African cities as a result of apartheid spatial planning. However, the extent of the disconnect between SEZ planning and municipal development planning was somewhat surprising, given the policy emphasis on spatial transformation in South Africa as well as intergovernmental relations. Overall, the

findings highlight that, while progress has been made in conceptualizing SEZs as economic development drivers of various spaces including urban areas, practical implementation of integrated planning remains a challenge. This implies that there is a pressing need for more robust mechanisms to ensure SEZs are fully integrated into urban planning processes such as the inclusion of SEZs in municipal IDPs, municipal by-laws and spatial development frameworks, as well as requiring SEZ master plans to demonstrate clear linkages with surrounding urban areas.

5.3. What is the relationship between SEZs and cities, and does the relationship promote SUD?

The relationship between SEZs and their host cities is dynamic and presents certain implications for SUD. The research findings, combined with existing literature, indicate a complex interplay of factors that influence whether this relationship promotes or hinders SUD.

5.3.1. Economic linkages and spillover effects

Ideally, SEZs should serve as economic engines that generate positive spillover effects for their host cities. The research results indicate that there is potential for SEZs to stimulate local economic development through backward and forward linkages. This aligns with the findings of Farole and Sharp (2017), who argue that well-integrated SEZs can catalyse broader urban economic transformation. Corroborating this, respondents highlighted the potential for SEZs to act as catalysts for broader urban economic development by providing opportunities for local SMMEs through preferential procurement. Exemplified through TASEZ, during the 2022/2033 financial year, the SEZ had a goal to assist 30 SMMEs and ensure that 30% of the construction procurement was with local SMMEs (TASEZ, 2024). This was exceeded with 33 SMMEs being assistance.

However, the extent to which these economic linkages materialize in practice varies and at times can be found to be limited and their sustainability questionable. The research results suggest that many SEZs still operate as economic enclaves, with a poor trickle-down effect to ambient hosting communities. This echoes the sentiments of Rodríguez-Pose et al. (2022) and Farole and Moberg (2014) who found that SEZs in Africa often struggle to generate significant spillover effects as well as limited

integration with local economic structures. The reasons for this include the focus on export-oriented production, the reliance on imported inputs, and the lack of capacity among local firms to meet SEZ requirements.

In view of the above, it is clear that the economic relationship between SEZs and cities can be asymmetrical. While SEZs may benefit from urban agglomeration economies and infrastructure, the reciprocal benefits to the city are not always evident. This raises questions about the equitable distribution of economic gains and the long-term sustainability of the SEZ-city economic relationship. In concert, the economic relationship between SEZs and cities does not consistently promote SUD as envisioned in theory.

Therefore, more strategic and intentional approaches are required in order to foster economic linkages between SEZs and their host cities. SEZ policies should be revised to include specific requirements for local content sourcing and supplier development programs. This could involve setting minimum thresholds for procurement from local businesses and implementing mentorship schemes to build the capacity of local suppliers to meet SEZ standards. Furthermore, SEZ authorities should work closely with local economic development agencies to identify and develop complementary industries in the surrounding urban areas.

5.3.2. Infrastructure development and urban services

Generally, there is interdependence between SEZs and cities in terms of infrastructure and service provision. Specifically, SEZs often require significant infrastructure investments, which can benefit the broader urban area. This was emphasised between TASEZ and CoT where the latter invested R 594 million over the 2022 medium term expenditure framework for new infrastructure assets related to TASEZ (CoT, 2023). Conversely, SEZs rely on citywide infrastructure and services to function effectively. This symbiotic relationship has the potential to drive urban infrastructure development in a way that promotes SUD.

However, the reality is often more complex. On one hand, as pointed out by Farole and Sharp (2017), cities may take on substantial liabilities in financing bulk

infrastructure for SEZs, particularly when zones are located on urban peripheries. This raises concerns about the equitable allocation of public resources and the potential for SEZs to divert investment away from other urban priorities. On the other hand, Altbeker et al. (2021) identified that infrastructure gaps from hosting urban areas have the potential to undermine SEZ performance in South Africa. Mbambo (2015) noted this challenge in respect to the effects of weak transport links between zones and surrounding urban areas. In the case of TASEZ, while its location near existing industrial areas is beneficial, the research findings indicate limited evidence of comprehensive infrastructure planning linking the zone to broader urban systems.

The infrastructure relationship has mixed impacts on promoting SUD and to this end, a more integrated approach to infrastructure planning is needed between SEZs and hosting urban areas. Drawing on recommendations from Wessendorp et al. (2020), TASEZ and the CoT should develop joint infrastructure master plans that align zone needs with broader urban development goals. These plans should prioritize sustainable and resilient infrastructure solutions, potentially leveraging innovative technologies as suggested by Black & Yang (2021). Furthermore, exploring alternative financing mechanisms, such as those proposed by Nel and Rogerson (2013), could help mobilize resources for infrastructure development without overburdening municipal budgets.

5.3.3. Governance and policy alignment

The governance relationship between SEZs and cities emerges as a critical factor in determining whether their interaction promotes SUD. In the case of TASEZ, the equal shareholding structure between national, provincial, and local government was cited as a positive factor promoting coordination. This aligns with literature emphasizing the importance of multi-level governance and stakeholder engagement for successful SEZs (Farole & Akinci, 2011; Moberg, 2015).

However, challenges remain in achieving seamless coordination. An unsurprising finding from the research was that issues such as a lack of shared understanding on how SEZs should contribute towards SUD and limited resources linked to capacity constraints were reported to hinder the ability of SEZs to fully contribute to SUD. Although a positive development, the equal shareholding approach for TASEZ was an

unexpected finding from the research. The SEZ Act does not make provision for this, however it forms part of the new approach by **the dtic** towards SEZs as directed by cabinet (Majola, 2023). Overall, the findings suggest that while formal governance structures exist, their effectiveness in promoting SUD is limited by practical implementation challenges.

To improve on the above, a fundamental rethinking of SEZ-city governance models is necessary to foster SUD. SEZ legislation should be amended to mandate the creation of joint planning and oversight committees that include representatives from all levels of government, SEZ management, and local community stakeholders. These committees should have clear decision-making authority and be tasked with ensuring alignment between SEZ development and broader urban sustainability goals. Furthermore, capacity-building programs should be implemented to equip both SEZ and local government officials with the knowledge and skills needed to effectively engage with SEZ planning and management. This could involve the establishment of dedicated SEZ units within municipal structures, staffed by professionals with expertise in both urban planning and industrial development. Additionally, regular forums for knowledge sharing and best practice exchange between different SEZs and their host cities should be institutionalized. These measures would help bridge the current governance gaps, fostering a more integrated and collaborative approach to SEZ development that is better aligned with SUD principles.

5.3.4. Social and spatial integration

The research revealed mixed findings regarding social and spatial integration between SEZ and hosting urban areas as related to SUD. Notably, that the strategic location of TASEZ bordering the Silverton and townships like Mamelodi and Nellmapius was cited as promoting “spatial transformation and urban integration” (TASEZ, 2022). This strategic positioning aligns with Farole and Sharp's (2017) recommendations for leveraging SEZs to address spatial inequalities in South African cities. Additionally, the presence of Community Project Committees (CPC) was viewed as a vital lever for ensuring that community centric issues are elevated within TASEZ structures.

However, challenges in achieving full social integration were evident. Some respondents expressed concerns about potential “fissures between the SEZ and the hosting urban areas” due to unmet community expectations. This reflects Bach's (2011) observations about the risks of SEZs operating as enclaves with limited local connections.

Todes and Turok (2018) argue that South African urban policy has struggled to effectively use spatial targeting instruments like SEZs to address urban fragmentation. While TASEZ has potential to promote spatial integration, its impact on social cohesion and inclusive urban development remains limited. This addresses the research question by suggesting that TASEZ's relationship with Tshwane is not consistently promoting SUD in terms of social and spatial integration. According to Neveling (2024) for in the case of Shenzhen, zones have come to define entire regions or large cities, SEZ operations shape the development of housing and neighbourhoods, daily and weekly routines, rhythms of cities, their local and international markets.

This finding indicates that a more holistic approach to SEZ integration is necessary. Drawing on Sami and Anand's (2015) work on Indian SEZs, TASEZ should develop comprehensive social impact management plans that go beyond employment to address broader community development needs. Furthermore, as suggested by Luthuli and Houghton (2015), participatory planning processes should be strengthened to ensure community voices shape TASEZ's development. Additionally, exploring mixed-use development in and around TASEZ, as proposed by Allam and Jones (2019), could help create a more seamless integration with surrounding urban fabric.

5.4. What are the SEZ policy and governance gaps and opportunities towards SUD?

5.4.1. Policy fragmentation and misalignment

A key governance gap identified in the research is the fragmentation and misalignment of policies relating to SEZs and urban development. The findings suggest that SEZ policies often operate in silos, disconnected from broader urban planning frameworks and sustainability strategies. The lack of explicit provisions for SUD in SEZ legislation emerges as a significant gap.

In the case of TASEZ, while the zone is mentioned in the CoT's IDP, there is limited integration of SUD principles in SEZ-specific policies. This policy gap reflects broader challenges identified in the literature, such as the disconnect between industrial and urban policies (Farole & Sharp, 2017). Therefore, this finding suggests that despite the potential of SEZs to contribute to urban development, the current policy framework does not adequately support this integration.

The research results indicate that current SEZ policies focus primarily on economic objectives, with limited consideration of broader sustainability goals. This aligns with the critique of Rodríguez-Pose et al. (2022), who argue that many African countries have adopted SEZ policies without adequately considering their implications for sustainable development.

The disconnect between SEZ and SUD policies presents both a challenge and an opportunity. On the one hand, the disconnect hinders the ability of SEZs like TASEZ to fully contribute to SUD. On the other hand, the disconnect opens up possibilities for policy reform and innovation. Additionally, as much the SEZs policies are limited towards SUD in hosting urban areas, municipal by-laws are equally silent on how SEZs should contribute towards SUD. Therefore, a review of law and polices to address fragmentation should occur on both sides and at an SEZ and urban governance level.

5.4.2. Governance structures and stakeholder engagement

The research findings revealed that a different governance model was used for TASEZ in comparison to the traditional approach. TASEZ has a shared governance across three spheres of government and while this is a unique development, the research findings indicate that this has not fully translated into effective coordination and shared understanding of SUD goals. This aligns with concerns raised by Moberg (2015) about the need for more inclusive governance models for SEZs.

An unexpected finding in the research was the development of board committees by TASEZ of which one of them is focused towards community engagement and embeddedness of the SEZ in the community. This is a bold move towards inclusivity and legitimisation of the local community as a key stakeholder. Notably, this development responds to Ponbumrung and Promphakping (2022) about the need for more inclusive and participatory approaches to SEZ governance. The researcher suggests that there could be an opportunity to develop a board committee that exclusively looks at SUD.

5.4.3. Capacity and resource constraints

The research results highlight significant capacity and resource constraints that hinder the ability of SEZs to promote SUD effectively. These include limited financial resources, lack of technical expertise in sustainability practices, and inadequate monitoring and evaluation systems. This aligns with the findings of Phiri and Manchishi (2020), who identify capacity constraints as a key challenge for SEZ development in Southern Africa.

The capacity gap is particularly evident in the environmental management of SEZs. The research findings suggest that many SEZs lack the technical knowledge and resources to implement effective environmental sustainability measures. This echoes the observations of Wang (2013) regarding the environmental challenges faced by SEZs in China.

However, the findings also highlight opportunities for innovative approaches to capacity building and resource mobilization. The research suggests a need for targeted interventions to enhance expertise in sustainable development within SEZ management structures. Addressing these capacity constraints presents opportunities for targeted interventions. The research findings suggest potential for capacity-building initiatives focused on sustainable industrial practices, green technology adoption, and integrated urban planning. Collaborations with academic institutions and international development partners could play a crucial role in bridging these capacity gaps.

5.4.4. Monitoring, evaluation, and accountability

The current performance metrics for SEZs focus primarily on economic indicators, with limited consideration of broader sustainability impacts. This aligns with the critique of Aggarwal (2019), who emphasizes the need for more comprehensive evaluation frameworks that capture the multidimensional impacts of SEZs. The lack of robust monitoring and evaluation systems presents challenges in assessing the true contribution of SEZs to SUD and in holding SEZ authorities accountable to sustainability outcomes. However, this gap also presents opportunities for developing more holistic performance measurement frameworks.

The research results also revealed opportunities to strengthen learning and knowledge sharing around SEZ-SUD linkages. Several respondents emphasized the importance of partnerships with academic institutions and think-tanks to build evidence and develop best practices. These findings were partially expected, given known challenges in measuring complex development outcomes. However, the lack of systematic approaches to assess SEZs' broader impacts on urban sustainability was more pronounced than anticipated, suggesting a significant gap in current governance practices.

5.5. Conclusion

This section draws on existing literature captured in Chapter 2, new literature as well as by reviewing the research results presented in Chapter 4 in order to understand whether SEZs as exemplified through TASEZ can facilitate SUD. The present chapter indicates that there is a complex relationship between SEZs and SUD. SEZs including TASEZ have shown that they have the potential to contribute towards SUD by driving economic growth through investment attraction. However, there are challenges with ensuring an inclusive distribution of economic benefits derived from SEZs. To this end, one cannot entirely claim that SEZ wholly contribute towards the economic pillar of SUD.

The research results also revealed that while SEZs create employment opportunities, legitimate concerns remain about the sustainability and quality of these jobs especially in the post-construction phase. To this end, it is advisable for SEZ to invest in skills development initiatives and knowledge transfer measures to prevent the importing of

skills. Partnerships with local universities and skills development centres will be key in facilitating the sourcing of local skills.

The research results reveal that the environmental sustainability of SEZs is an area of contention and opportunity. On the latter, there is growing attention on the potential of SEZs to be centres of cleaner production. For example, the intent to adopt renewable energy as per TASEZ is one of the many opportunities for SEZs. Despite these opportunities, there are still tensions between SEZs and environmental protection. Therefore, there is an urgent need to go beyond environmental legislation and ensure that SEZ regulations integrate sustainability and environmental measures, something that is currently missing.

Urban planning and spatial integration remain a challenge concerning the relationship between SEZs and cities. SEZs also remain poorly integrated into urban planning mechanisms as they are not connected through infrastructure with the local urban area. To this end, there is a risk that the location of SEZs can in a way reinforce apartheid spatial planning as well as increase urban sprawl. While TASEZ's location shows potential for promoting spatial transformation, there is room for improvement in aligning SEZ development with comprehensive urban strategies.

The research results also revealed that governance and policy alignment issues could prevent the realisation of SUD. The unique governance structure of TASEZ, involving equal shareholding across government levels, presents opportunities but it is clear that it has not been fully leveraged as a pathway for promoting SUD. Additionally, there remains a disconnect between the SEZ Act and SUD, as it does not refer to cities or urban areas. Therefore, a reform is needed in order to integrate these factors. Further, there is a need for municipal bylaws to also establish provisions for SEZs.

In conclusion, although SEZs like TASEZ show potential to contribute to SUD, realizing this potential requires the addressing of significant policy and governance gaps. By adopting a more integrated, participatory and sustainability-focused approach to SEZ development, policymakers and practitioners can better leverage these zones as catalysts for sustainable urban transformation.

6. CONCLUSION AND RECOMMENDATIONS

6.1. Introduction

This qualitative case study investigates the role of SEZ in facilitating SUD using the TASEZ as a case study site. In line with the research questions, the study examined the nature and functions of SEZs and the extent to which these facilitate SUD. Secondly, the relationship between SEZ and cities was investigated including the level at which it can promote SUD. Lastly, the study analysed policy and governance mechanisms as related to SEZs and the extent to which they support SUD.

As part of the qualitative study, primary data was collected from 13 key informant interviews, of which 8 were held with respondents that had a direct connection with TASEZ, one had an indirect connection, while 4 did not have a connection with TASEZ at the time of the interview. Secondary data was obtained from a document analysis of policy and strategic planning documents linked to SEZs, TASEZ and CoT. The data obtained from primary and secondary data was presented and analysed, leading to the findings of the research detailed in the subsequent section.

6.2. Major findings

Leveraging SEZs for SUD is a complex initiative consisting of both challenges and opportunities. The below major findings are reflective of this dichotomous outlook. Notably these findings are limited to the TASEZ and City of Tshwane region as a cannot be generalised to other SEZs across South Africa.

6.2.1. Economic impact and integration

Economic impact and integration emerged as one of the major findings of the research. SEZs including TASEZ demonstrate a positive contribution towards the economic aspects of SUD through investment attraction and job creation. This finding is unsurprising as it plays into the space of the functions of SEZ within the fundamental nature of functions of SEZ as industrial policy mechanisms to drive industrialisation and attract foreign direct investment.

Despite this positive contribution, the study findings indicate that limitations remain on the contribution of SEZs to the economic dimension of SUD. The equitable distribution

of economic benefits beyond the zone into the domestic economy was reported as a limiting factor towards SUD facilitation of SUD. This indicates that there is a need for deliberate interventions to ensure that economic spillovers from SEZs are felt beyond the SEZ boundaries. This will reduce the infamous “island” or “enclave effect” that SEZs in the country are associated with. Additionally, it will enhance domestic led supplier chains in ensuring that the local economy is developed in concert with the growth of the SEZ.

6.2.2. Governance and policy misalignment

The research results revealed a critical misalignment between SEZ policies and the urban development framework. This was further pronounced when the SEZ Act was examined and did not contain a single reference to urban areas, city or urban development. In parallel, the urban framework from CoT had limited mention of TASEZ. Notably the City’s Regional Spatial Development Framework was written in 2018 prior to the TASEZ establishment.

Additionally, the SEZ Act is not anchored on the principles of sustainable development but rather, focuses on foreign investment attraction and job creation. This lack of prioritisation towards sustainable manufacturing is a significant barrier towards the prioritisation of SUD within SEZ. Thus, SEZs are not able to set SUD targets or priorities due to a lack of direction.

6.2.3. Participatory and shared governance models

The TASEZ operates according to an equal shareholding model between CoT, GPG and the DTIC; an innovative step that is outside the remit of the SEZ Act. Notably, this model was lauded by respondents for addressing bureaucratic processes and inspiring commitment across all three spheres of government. Additionally, the model was perceived as a living example of cooperative governance. Despite the significance of the shared governance model, it is clear that it is poorly leveraged to support SUD initiatives.

It was seen as strategic way of inspiring participatory governance when the board established board committees (CPC) and it was ensured that the board members were

representative of all shareholders including the Ford Motor Company SA, one of the biggest anchor tenants of the SEZ. However, it was noted that these platforms are again silent on the facilitation of SUD initiatives. To this end, there should be an opportunity to expand the mandate of the platforms to include SUD targets.

6.2.4. Environmental sustainability and cleaner production processes

The research revealed that TASEZ is in the process of renewable energy adoption. This signals a growing awareness of the SEZs potential role in supporting environmental sustainability. Additionally, the research findings revealed that there is a potential role for SEZs to adopt cleaner production processes and move towards becoming eco-industrial parks, thereby supporting urban green initiatives. Notably SEZs tenants have a large role to play in promoting cleaner production processes.

However, it is noted that tensions remain between industrial development and environmental protection, positing a challenge towards the environmental pillar of SUD. In addition, the absence of robust environmental sustainability provisions in SEZ legislation emerged as a major obstacle to advancing the environmental aspects of SUD.

6.2.5. Spatial integration and sustainable urban morphology

The study highlighted that SEZs like TASEZ have the potential to promote spatial transformation, a key aspect of SUD in post-apartheid South African cities. This is because TASEZ is strategically located near Mamelodi and other townships. Additionally, the research results indicated that the establishment of SEZs often also leads to infrastructure investments, which benefit surrounding communities as well as vital areas inspiring a “work, play and live” model as championed by the CoT.

However, there have been missed opportunities of using SEZs as tools to promote compact, integrated urban development, due to the limited mention of SEZs in city planning documents. As a result, the limited integration of SEZs into comprehensive urban planning processes risks reinforcing unsustainable urban patterns. Additionally, historical influences of apartheid spatial planning, and current attempts by post-apartheid governments in devolving economic development opportunities near

townships has tended to have somewhat disappointingly weak development impacts and very expensive endeavour.

6.2.6. Capacity and resources for implementing SUD

Results from the research study indicate that there are significant capacity gaps in relation to knowledge, finances and technical expertise as linked to SEZ and SUD. These gaps particularly hinder the effective contribution and ability of SEZs to support SUD. Additionally, the research results show that there is a critical need for building expertise in sustainable industrial practices and integrated urban planning within SEZ management structures.

The results from the study also indicate the lack of a uniform understanding towards how SEZs are to contribute towards SUD between both TASEZ and CoT officials. To this end, capacity-building endeavours would be beneficial in supporting a harmonised outlook towards SUD.

6.3. Recommendations

The study provides the following recommendations:

6.3.1. SEZ policy reform and integration of SUD principles

Firstly, it is recommended that the SEZ policy be revised to be explicit on sustainable development as a guiding principle. Secondly, for SEZs located within the urban areas, the SEZ policy should be amended to provide direction on how SUD can be facilitated. The SEZ master plans, business case or feasibility study documents could be used as mechanisms for elaborating on how SEZs can facilitate SUD.

6.3.2. Alignment between SEZ policy and urban development planning

The study findings highlight the disconnect between the SEZ Act and urban development mechanisms such as municipal by-laws, IDP, and spatial development frameworks. In view of this, the study recommends a review of respective instruments to provide representation of aspects as linked to SUD within the linked domains.

6.3.3. Intergovernmental models and institutional structures for SUD

Collaborative governance structures for TASEZ have proven to be successful; for example equal shareholder ownership and representation of actors from the three spheres of government in the board and in board committees. The study recommends the creation of an SUD board committee consisting of representatives from local government, SEZ management, community stakeholders, and sustainability experts. Alternatively, the existing mandate of present board committees could be expanded to include SUD.

6.3.4. Economic linkage programs

From the study findings, it is suggested that targeted programs be developed and implemented to strengthen economic linkages between SEZs and local urban economies. This addresses the limited economic spillovers identified in the study and promotes more inclusive economic growth aligned with SUD principles.

6.3.5. Eco-industrial development

The study recommends that TASEZ integrate cleaner production processes and eco-industrial development principles as these support the realisation of CoT's SUD goals. Funding and incentive structures should be aligned to support the transition towards more sustainable SEZs.

6.3.6. Investment in capacity building towards SUDs

The study identified a capacity gap regarding SUD, which manifests in the form of limited knowledge products and resources (financial and human) dedicated towards navigating SEZs in realising SUD. In addition, a uniform understanding of SUD between TASEZ and CoT was lacking. To this end, it is advisable that a capacity building initiative be developed that is dedicated at orientating SEZ and municipal officials on SUD. As a start, this can take the form of monthly dialogues to increase knowledge and awareness. Thereafter, the initiative could evolve into strategic partnerships to unlock resources in order to undertake SUD activities.

6.3.7. Establishment of partnerships for inclusive economic development

There is a need to ensure that the economic development benefits brought on by SEZ to the domestic economy go beyond the construction phase. To realise this, it is important that a strong ecosystem is built in terms of supplies and labour. As TASEZ finds itself at this juncture, the study recommends that for SEZs to stimulate inclusive economic development, a key aspect of the economic pillar of SUD, it is advisable that SEZs form strategic partnership with surrounding universities and technical vocational institutions. This is to ensure that the SEZ does not import labour from beyond the zone's hosting urban area. Additionally, SEZs should invest in the development of enterprise supplier development programmes to grow the SMME pool in the existing value chain. Business matching and public private partnerships between companies within he SEZ and outside are key.

The recommendations listed above provide various pathways for how SEZs can improve on their role towards facilitating SUD. It is clear from the research there is a role for SEZs in facilitating SUD, it is the how element that requires elaboration and the recommendations attempt to provide context on the how.

6.4. Suggestions for future research

There are several areas that future research could address as per below:

- Substantive relationship of SEZs and SUD outcomes
- Influence of historical apartheid spatial planning in sharing the relationship between SEZs and urban areas.
- Effects of SEZs and market forces\ on the morphology of urban areas
- Best practices from other countries that have successfully integrated SUD principles into their SEZ policies, providing valuable insights for policy reform in South Africa.
- Models of capacity building and resource mobilization from other contexts, potentially offering valuable lessons for enhancing the ability of SEZs like TASEZ to contribute to SUD. Additionally, investigating the potential of public-private partnerships and international cooperation in addressing these constraints could yield important insights.

- Assess the economic viability and environmental impact of transitioning existing SEZs to eco-industrial park in order to support SUD.
- Analyse how SEZs can be better integrated into urban infrastructure systems, including transportation, energy, and water networks in order to address urban sprawl and apartheid spatial planning.
- Explore the role of digital technologies in supporting SEZ facilitated SUD.

In conclusion, although SEZs such as TASEZ exhibit potential in fostering specific elements of SUD, particularly regarding economic growth and employment generation, their overall influence on holistic SUD remains constrained and disjointed. Unlocking the complete potential of SEZs as catalysts for SUD necessitates a fundamental transformation in their conceptualisation, planning, and operation. The aforementioned recommendations offer a framework for converting SEZs from predominantly economic enclaves into cohesive centres of sustainable urban-industrial development.

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APPENDICES

Appendix A: Research Instrument

Appendix A-1 : Interview Guide CoT

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
University of the Witwatersrand
Wits School of Governance Tel: 011 717 352

Interview guides for Key Informant Interviews

1. Questionnaire: Selected informants from City of Tshwane Metropolitan Municipality

Overview and purpose of the interview

The purpose of this interview is to answer questions for the research project " *Examining the role of special economic zones in facilitating sustainable urban development: A study of the Tshwane Automotive Special Economic Zone* "

Part A: Introductory Questions

1. What is your current role at the CoT?
2. What duties do you undertake as part of the role?

Part B: Interaction between Tshwane Automotive SEZ and CoT

3. How does the CoT interact with the Tshwane Automotive SEZ? Please describe the facilitating institutional structures and governance instruments; coordination and planning methods, if any?
4. What would list as the gaps and opportunities regarding the interaction between Tshwane Automotive SEZ and CoT?
5. Do you think reforms are needed to the SEZ policy and regulatory domain to enhance interaction between urban areas and SEZs? Yes/ No. Explain or give examples.

Part C: Questions related to sustainable urban development of the City of Tshwane

6. What does the concept of sustainable urban development mean to you?
7. Sustainable urban development has been characterised in the literature under four pillars, namely social, environment, economic and governance. Which of these pillars do you think SEZs can support?

   Please answer by means of ticking yes/ no

Sustainable urban development pillar	Yes	No	How? (Or give example
Social			
Environment			
Economic			

Governance			

8. What information resources / guidelines are you aware of that inform the efforts of SEZ's to contribute to SUD / any of its pillars?

Part D: Questions related to the CoT and utilisation of the SEZs to promote sustainable urban development.

9. Is there a shared understanding with the CoT on how Tshwane Automotive SEZ is to support the city's SUD goals / related sustainability objectives?
10. What are the governance and institutional methods used to coordinate implementation of SUD? Is there Tshwane SEZ represented ? Yes/No
11. What reforms if any should be made with regards to urban planning and governance measures in order to support the contribution of the Tshwane Automotive SEZ to the sustainable urban development goals of the CoT?

Part E: Closing comments and Questions.

12. What do you consider as key governance gaps and opportunities to enabling sustainable urban development through SEZs?
13. In your opinion what would you list as the key success factors for SEZs to consider when they want to strengthen their role and contribution towards the sustainable urban development path of a city?

Appendix A-2: Interview Guide TASEZ

University of the Witwatersrand

Wits School of Governance Tel: 011 717 352

Interview guides for Key Informant Interviews

Overview and purpose of the interview

The purpose of this interview is to answer questions for the research project " *Examining the role of special economic zones in facilitating sustainable urban development: A study of the Tshwane Automotive Special Economic Zone* "

Part A: Introductory Questions

1. What is your current role at your organisation?
2. What duties do you undertake as related to special economic zones / sustainable urban development?
3. How are you connected with the Tshwane Automotive SEZ?

Part B: Interaction between SEZs and urban areas

4. In your opinion, why is it important for SEZs to interact with their hosting urban areas?
5. In your experience what could be some of the challenges or contributors which hinder interlinkages between SEZs and hosting urban areas?

Part C: SEZs nature and functions as it relates to sustainable urban development

6. What does the concept of sustainable urban development mean to you?
7. Sustainable urban development has been characterised in the literature under four pillars, namely social, environment, economic and governance. Which of these pillars do you think SEZs can support?

Please answer by means of ticking yes/ no

Sustainable urban development pillar	Yes	No	How? (Or give example
Social			
Environment			
Economic			
Governance			

8. What information resources/guidelines are you aware of that inform the efforts of SEZ's to contribute to SUD / any of its pillars?
9. What kind of support do you think SEZs need in order to facilitate sustainable urban development?

Part D: Tshwane Automotive SEZ and Sustainable Urban Development

10. How does the CoT and Tshwane Automotive SEZ interact with each other ? Please describe the facilitating institutional structures and governance instruments; coordination and planning methods, if any?
11. What would list as the gaps and opportunities regarding the interaction between Tshwane Automotive SEZ and CoT?
12. How does the notion of sustainable urban development inform if at all the role and/or key functions of the Tshwane Automotive SEZ?
13. Is there a shared understanding with the CoT on how Tshwane Automotive SEZ is to support the city's SUD goals / related sustainability objectives?
14. What kind of support do you think Tshwane Automotive SEZ needs in order to facilitate sustainable urban development?
15. What are the governance and institutional methods used to coordinate the implementation of SUD in CoT? Is the Tshwane SEZ represented ? Yes/No
16. What reforms if any should be made with regard to urban planning and governance measures in order to support the contribution of the Tshwane Automotive SEZ to the sustainable urban development goals of the CoT?

Part E: Closing Comments and Questions.

17. What provisions does the policy and regulatory environment of SEZs (Special Economic Zones Act 16 of 2014) make towards the interaction between SEZs and hosting urban areas?
18. Do you think reforms are needed to the SEZ policy and regulatory domain to enhance interaction between urban areas and SEZs? Yes/ No Explain or give examples.
19. What do you consider as key governance gaps and opportunities for enabling sustainable urban development through SEZs?
20. In your opinion what would you list as the key success factors for SEZs to consider when they want to strengthen their role and contribution towards the sustainable urban development path of a city?

Appendix A-3: Interview Guide Research, Academia and :Policy

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
University of the Witwatersrand
Wits School of Governance Tel: 011 717 352

Interview guides for Key Informant Interviews

Overview and purpose of the interview

The purpose of this interview is to answer questions for the research project " *Examining the role of special economic zones in facilitating sustainable urban development: A study of the Tshwane Automotive Special Economic Zone* "

Part A: Introductory Questions

1. What is your current role at your organisation?
2. What duties do you undertake as related to special economic zones / sustainable urban development?
3. How are you connected with the Tshwane Automotive SEZ?

Part B: Interaction between interaction between SEZs and urban areas

4. In your opinion, why is it important for SEZs to interact with their hosting urban areas?
5. In your experience what could be some of the challenges or contributors which hinder interlinkages between SEZs and hosting urban areas?
6. What institutional and planning mechanisms can be utilised to foster linkages between SEZs and hosting urban areas?
7. What provisions does that policy and regulatory environment of SEZ make towards the interaction between SEZs and hosting urban areas
8. Do you think reforms are needed to the SEZ policy and regulatory domain to enhance interaction between urban areas and SEZs? Yes/ No

Part C: SEZs nature and functions as it relates to sustainable urban development

9. What does the concept of sustainable urban development mean to you?
10. Sustainable urban development has been characterised in the literature under four pillars, namely social, environment, economic and governance. Which of these pillars do you think SEZs can support?

Please answer by means of ticking yes/ no

Sustainable urban development pillar	Yes	No	How? (Or give examples)
Social			
Environment			
Economic			
Governance			

11. What information resources / guidelines are you aware of that inform the efforts of SEZ's to contribute to SUD / any of its pillars?
12. What kind of support do you think SEZs need in order to facilitate sustainable urban development?

Part D: Closing comments and Questions.

13. What do you consider as key governance gaps and opportunities for to enabling sustainable urban development through SEZs?
14. In your opinion what would you list as the key success factors for SEZs to consider when they want to strengthen their role and contribution towards the sustainable urban development path of a city?

Appendix B: Participation consent form

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Consent Form: Key Informants

Title of research project: Examining the role of special economic zones in facilitating sustainable urban development: A study of the Tshwane Automotive Special Economic Zone

Name of researcher: Amanda Nyingwa

I, ……..……..., agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that direct quotations from my interview may be used by the researcher in their research report	YES	NO
I agree that my participation will remain anonymous (my name will not be used by the researcher in their research report	YES	NO
I agree that other researchers may use the information I provide in my interview (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on	YES	NO

…… (signature of participant)

…… (name of participant)

…… (date)

Appendix C: Ethics Clearance

Research Office:
Lehlohonolo Mmolotsane
Tel: 011 717 3968
Email: ayanda.molefe@wits.ac.za

Research Ethics Chair:
Rekgotsofetse Chikane
Tel: 0117173869
Email: rekgotsofetse.chikane@wits.ac.za

24 September 2022

Dear Amanda Nyingwa

Title: Examining the role of Special Economic Zones in facilitating Sustainable Urban Development - A study of the Tshwane Automotive Special Economic Zone
Student Number: 1671655
Degree: Masters in Management
Ethics Clearance Number: *WSG-2022-68*

All candidates must satisfy the University's ethical standards for research. Your ethics application has been received and reviewed by the Wits School of Governance Human Research Ethics Committee.

Your ethical clearance has been approved subject to you getting permission to conduct research from all sites where research is conducted. The letter(s) of permission to undertake research must be submitted to the WSG Research Office and kept on file with your final proposal and other ethics documents.

You may commence your data collection under the guidance of your supervisor. In the event that the scope, methodology or nature of the research changes, you are required to submit another ethics application reflecting the changes.

The onus is on you as the candidate, with support from your supervisor, to ensure your research complies with university human research ethics policies and protocols at all stages of the research process.

It is recommended that you keep this letter in a safe place as you are responsible for ensuring you have proof of ethics clearance and have lodged the ethics clearance / protocol number with Faculty before final submission of your research report. If you do not have an ethics clearance number, you are not permitted to graduate.

Please do not hesitate to contact me if you have any queries.

Yours sincerely,

Rekgotsofetse Chikane

Rekgotsofetse Chikane
Research Ethics Chair