



Investigating the Effectiveness of Policies on Household Water and Sanitation Debt

Escalation at eThekweni Municipality

By

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LIST OF ACRONYMS

AI	Artificial Intelligence
CA	Capability Approach
DCoG	Department of Cooperative Governance
DWS	Department of Water and Sanitation
EWS	Ethekwini Water and Sanitation
FBS	Free Basic Services
FBW	Free Basic Water
HRBA	Human Rights-Based Approach
IDP	Integrated Development Plan
IMF	International Monetary Fund
IWRM	Integrated Water Resource Management
Kls	Kilolitres
MFMA	Municipal Finance Management Act
MSA	Municipal Systems Act
MTREF	Medium-Term Revenue and Expenditure Framework
PCT	Public Choice Theory
SALGA	South African Local Government Association
SDG	Sustainable Development Goal
UK	United Kingdom
UN	United Nations
WASREB	Water Services Regulatory Board
WSA	Water Services Act

ABSTRACT

This qualitative case study examines the effectiveness of local policies in mitigating the growth of household water and sanitation debt in the eThekweni Municipality, South Africa. Based on semi-structured interviews with a highly vulnerable peri-urban resident. Semi-structured interviews will be employed in this study's qualitative research methodology to collect data from key stakeholders of the Water and Sanitation Directorate, as well as residents of eThekweni Municipality. 15 participants who are directly impacted by and/or involved in the implementation of water and sanitation policies were chosen using non-probability purposive sampling. To find important trends and root causes, the data were subjected to a thematic analysis.

There is a low level of policy awareness, and access to indigent relief is limited, despite numerous visits to the Sizakala centre and community revelations that there is no work available. The implementation is biased towards punishment, focusing on debt recovery rather than repair, and blocks communication, creates dependency among councillors, and unclear distribution spreads misinformation. Mutual accountability is socio-culturally recognised, but conditional on the investment of municipal infrastructure, which underscores a trust schism.

Complemented by the current literature, the results highlight institutional silos rather than non-compliance among the residents as the key sources of debt. According to the findings, the household water and sanitation debt in eThekweni municipality continues to grow despite current policies, due to ineffective implementation, income inequality, a lack of community engagement, and ambiguous policy criteria. Access to support is challenging for residents, underscoring the need for more sustainable, transparent, and inclusive policy approaches.

It is recommended that equity-based changes be made to national frameworks to achieve sustainable governance. Weaknesses are the single-interview generalisability that is alleviated by future mixed-methods development. The work contributes to the current research on pro-poor utility management, where interventions should be holistic in terms of fiscal sustainability and the constitutional realisation of water rights.

Keywords: Water and Sanitation, Policy effectiveness, eThekweni Municipality, Income Inequality, Community engagement,

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CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1 Introduction

The National, Provincial, and Local Governments in South Africa are the three tiers of government, each with separate legislative and executive powers. The municipality, for this study, eThekweni Municipality, usually referred to as local government, is the one closest to the citizens and forms a council where decisions are made. Its duty is to provide utilities such as electricity, waste collection, and access to water and sanitation, which serves as a means of realizing and recognizing clean water and sanitation as a fundamental human right under Sustainable Development Goal 6 (SDG 6). The emphasis on universal and equitable access to affordable, safe water and sanitation contributes to the fact that effective municipal policies, which serve to manage service delivery and affordability, are of utmost importance (UN, 2023); thus, it is a goal.

The South African government is supposed to supply the most basic of necessities to underprivileged families with the Free Basic Services (FBS) program (eThekweni Municipality, 2023). Nevertheless, the effectiveness of the current Credit Control and Debt Collection Policy and Indigent Policy is questionable, as eThekweni Municipality has yet to address the rising household water debt. The can is an indicator of larger socio-economic issues, such as income inequality and unemployment (Motsosi, 2023). This study was necessary to provide evidence of the impact and efficiency of existing policies, as this issue is not being satisfactorily managed by the municipality.

The effectiveness, justice, and sustainability of municipal service administration are seriously called into doubt by this developing issue of debt and water affordability. The importance of critically assessing the effectiveness of the current Credit Control and Debt Collection Policy, as well as the Indigent Policy, has never been at maximum performance, as eThekweni Municipality still has loopholes in these issues. The rise of household water debt is one indicator of broader socioeconomic pressures, such as income inequality and unemployment (Motsosi, 2023). The municipality's failure to stabilise the rise in household water debt has necessitated the study to provide evidence on the effectiveness of policies. A study of eThekweni Municipality was utilised.

1.2 Background

The eThekweni Municipality provides a range of services, including water and wastewater management that meets the highest standards and is both affordable and acceptable to its residents and those who work in and around the eThekweni Region. The primary goal of eThekweni Water and Sanitation is to provide each resident of the eThekweni Municipality with access to a basic water supply and sanitation service that is appropriate, acceptable, safe, and competitively priced. Water is provided to 981,172 homes, with 599,478 of these being indigent. There are 876,425 households served by sanitation, with 463,494 of them being indigent. (eThekweni Municipality, 2023)

South African local governments, including eThekweni Municipality, are responsible for providing their citizens with direct access to water and sanitation services. Municipal records state that eThekweni Municipality, just like the other Municipalities, also created programs such as the Indigent Policy to guarantee that low-income households get free basic water services (EtheKweni Municipality, 2023). There are often practical challenges that still exist in implementing these principles. The inconsistency between the creation and execution of policies highlights a significant weakness that impacts the quality of service provision. This mismatch strains municipal resources, in addition to affecting the confidence and satisfaction of citizens, as ineffective policy implementation results in higher operating expenses and inefficiencies. Robust policy frameworks are necessary for effective governance. The need for an aging infrastructure and the expanding urban population make managing water supplies more difficult.

The situation in eThekweni is representative of a wider trend observed in South African municipalities, where the discrepancy between policy and practice in the provision of water services necessitates a review of the existing frameworks and tactics (eThekweni Municipality, 2023). The public comments and yearly reports that emphasise the discontent with service delivery sometimes translate into a refusal to pay for services, which exacerbates the debt problem. These complex issues necessitate urgent strategic changes in the administration of water services. By bridging the gap between policy goals and actual service delivery, these changes should ensure that water services are not only fair and sustainable but also readily available. Rethinking current policies, streamlining administrative processes, and promoting community involvement are all part of this effort, ensuring that the rights guaranteed by the Constitution are effectively implemented.

Inadvertently, the history of the debt management issue related to water and sanitation in eThekweni Municipality reveals a complex interplay between public perception, socioeconomic factors, policy implementation, and constitutional obligations. A thorough strategy is needed to address these problems, considering both the legal framework and the actual realities that local governments and their citizens must contend with.

1.3 Problem Statement

In terms of the Bill of Rights, the Constitution of South Africa (1996), "Everyone has the right to have access to sufficient water." Water is considered the source of everything, the source of life, and a basic human right in South Africa. Water affordability is a crisis in the modern era, violating several rights guaranteed by the Bill of Rights. Considering the current financial and economic challenges, careful consideration must be given to whether to raise or lower tariffs. Many people find themselves unable to afford essential services due to price rises that coincide with rising unemployment and reductions in social funding. This challenge directly connects to Sustainable Development Goal 6 (SDG 6), which aims to sustainably manage water and sanitation for all. The inability to pay for water services, on the other hand, fails to contribute to this progress but now highlights the importance of improved implementation and financial management strategies.

Growing household debt in communities of the eThekweni Municipality for water and sanitation services highlights a mismatch between the goals of policies and their effective implementation. Economic constraints include growing unemployment, inflation, and socioeconomic gaps, which are exacerbated by events such as the COVID-19 pandemic and local natural disasters, further compounding this problem and making it more difficult for people to afford services.

The indigent budget is underspent despite the existence of mechanisms such as the Indigent Policy to aid qualifying households, as many municipalities neglect to diligently acquire their registers for individuals who are eligible to apply. Even with these constitutional protections, many municipalities, including eThekweni Municipality, struggle to meet their responsibilities due to a range of socioeconomic and management challenges. Although policies are well intentioned, problems in implementation and administration often undermine their efficacy, as demonstrated by studies such as those by Kuhlengisa (2021), which reveal varying levels of service satisfaction across different districts (Mahlasela, Oke, Madonsela, 2020).

In this study, the focus was on water poverty rather than water scarcity, which is defined as the rising proportion of customers unable to cover their household's water bills (Thakur, 2021). The insufficient staffing and inadequate training on these systemic problems also hinder the efficient implementation and supervision of programs designed to assist the most disadvantaged groups. Gaps between the policy framework and its actual effect are the outcome, which reduces the potential advantages of government assistance initiatives and contributes to the ongoing problems with service delivery.

Although flow limiters and restrictors, as water management devices, are two of the many tools the eThekweni Municipality has implemented to control water debt, the outcomes have been uneven. Furthermore, the effectiveness of the Flow-Limiter Device, which limits daily water use to 200 litres per residence while allowing residents to pay off their water obligations, remains questionable. Having said that, despite control measures, the eThekweni Municipality Credit Control and Debt Collection Policy remains somewhat disadvantageous to both the municipality and its clients.

1.4 Aim and Objectives of the Study

Aim

The main aim of this study is to investigate the effectiveness of Policies on household water and sanitation debt escalation at eThekweni Municipality.

Objectives

1. To identify the main factors that contribute to the increase in household water and sanitation debt and non-payment in eThekweni Municipality.
2. To examine the effectiveness of the Credit Control and Debt Collection Policy as well as the Indigent Policy already in place, to provide fair household access to water and sanitation services in eThekweni Municipality.
3. To develop and formulate strategies to increase community involvement in curbing water and sanitation household debt escalation in eThekweni Municipality.

1.5 Research Question

Main Research Question

How can eThekweni Municipality policies improve the management of water and sanitation services to ensure equitable access and financial sustainability while addressing the escalating household water and sanitation debt?

Sub-Questions

1. What factors contribute to the escalation of household water and sanitation debt in eThekweni Municipality?
2. How effective are the current Credit Control and Debt Collection Policy as well as the Indigent Policy in eThekweni Municipality in ensuring equitable access to water and sanitation services?
3. What strategies can be implemented to enhance community engagement and policy compliance in the management of water and sanitation services to curb household debt escalation in the eThekweni Municipality?

1.6 Research Methodology

The research methodology entails a systematic approach to addressing a research problem. As a process of addressing a research problem, the research methodology involves various elements, including research design, research philosophy, research paradigm, target population and sampling, research instrument, data analysis, validity and reliability, limitations of the study, and ethical considerations (Sreekuma, 2025).

1.6.1 Methodology Approach

This study used the qualitative method to investigate the complexity of household municipal water and sanitation debt in eThekweni Municipality. A qualitative analysis, conducted within an explanatory sequential design, was employed to acquire a deeper understanding. Data was collected through semi-structured interviews, which was subsequently organised and analysed thematically using NVivo software to identify trends and provide insights into the impacts of policy. Targeted perspectives were extracted from a purposive sample of 15 participants, including water and sanitation officials, general customers, and local residents. Data sources were triangulated to improve the validity and dependability of the findings.

1.6.2 Ethical Considerations

Researching ethical issues is crucial, especially when it involves human subjects. The rights and welfare of participants are protected by this research through strict adherence to ethical guidelines.

Informed Consent: The ethical strategy of the research is based on getting informed permission from every participant (Harrison, Reilly, & Creswell, 2020). This entails providing participants with thorough information about the goals, methods, potential hazards, and benefits of the research, so that they are aware of their engagement and can provide their informed consent.

Confidentiality and Anonymity: Strict steps were taken to preserve anonymity and secrecy. All data was kept safe, and any reports or publications arising from this study was either delete or modify personal identifiers.

1.7 Significance of the study

The significance of this research in eThekweni Municipality spans many facets of social justice, sustainable urban development, and public administration (Motsosi, 2023). The rationale of the significance of this study is to examine factors driving rising household water and sanitation debt in eThekweni, elevating the portfolio at risk among bottom of the-pyramid households, while assessing policy effectiveness and strengthening community participation for sustainable debt-management. This study addressed significant issues at the intersection of governance, public health, and human rights by examining the underlying causes of household water debt and assessing the efficacy of laws aimed at ensuring water access.

Effective administration and administrative efficiency depend on research. Considering the difficulties highlighted by previous studies (eThekweni Municipality, 2023), this study provided empirical information and analysis that may help municipal organisations and policymakers develop and implement programs addressing debt-escalating issues. Given that administrative inefficiencies and ineffective policy implementation have been identified as major obstacles to service provision, this was particularly pertinent (Pillay and Mutereko, 2022). Better service delivery will follow from improved governance, which will help raise public confidence and compliance among citizens, therefore fostering a more stable and just municipal environment.

This research has significant implications for social justice. Focusing on the efficacy of indigent policies, the study addressed the problem of water accessibility for the most vulnerable groups in the municipality. Maintaining the constitutional entitlements to enough water and sanitation requires that these measures go beyond simple pledges (Bill of Rights, Constitution of South Africa, 1996). Households benefit from this study by learning about more choices for covering their household water debt. Effective legislative actions may result in major changes in the living circumstances of underprivileged people, lowering the health hazards related to poor water and sanitation, and easing socioeconomic inequality.

Furthermore, the study advanced sustainable urban growth. Coping with environmental issues and urban expansion requires the long-term sustainability of water resources, which is ensured by understanding and addressing the causes of household water debt and service disparities (Motsatsi and Gibberd, 2019). The framework this research offered to other municipalities dealing with comparable problems may help further efforts towards sustainable urban management in South Africa and possibly in other comparable situations worldwide. This study is important for eThekweni Municipality and beyond due to its potential to promote better policy implementation, increase awareness of available programs, enhance social fairness, and support the sustainable development of metropolitan regions. In addition, this study provided research findings that inform policy changes not only in eThekweni Municipality but also in other comparable municipalities facing similar urgent issues.

1.8 Organisation of Chapters

Chapter 1: This chapter presents the study's research topic and provides context by breaking down pertinent ideas. The problem statement and the primary goal of the research project are then stated in detail. This chapter also presents research questions and study objectives. It provided an explanation of the research methods used in the study.

Chapter 2: This chapter reviewed the literature. The aims and objectives were pertinent and related research, investigate the factors contributing to the rise in water and sanitation debt, assess the effectiveness of recovery strategies, and identify preventive measures that could slow the increase in household water and sanitation debt. This covers research on debt collection tactics and water and sanitation governance in South Africa. Additionally, the assessment provided a broad overview of the condition of water and sanitation in relation to institutional frameworks, policies, and conservation efforts. Furthermore, the emphasis on three primary frameworks — namely, the Human Rights-Based Approach (HRBA), Public Choice Theory

(PCT), and the Capability Approach (CA) this chapter provided an overview of the theoretical underpinnings for comprehending household water and sanitation debt. The causes of water debt and the efficacy of strategies aimed at addressing it are examined using these ideas.

Chapter 3: The research techniques employed to investigate household water and sanitation debt in the Ethekwini Municipality and Inner West Region of the eThekweni Municipality, South Africa, are outlined in this chapter. It described the methodology, tools, sample, and analysis techniques intended to produce comprehensive, significant insights.

Chapter 4: The results of the data collection procedure for the study's qualitative components are presented and shown in this chapter. It examined the findings from semi-structured interviews with pertinent participants. This stage contributed to the preliminary data and provided insight into their views, knowledge, and awareness of water conservation, as well as the options available for addressing rising water and sanitation debts, such as Debt Collection and Credit Control policies and Indigent Policies. It further addressed the study's aim, which is to investigate the effectiveness of Policies on household water and sanitation debt escalation at eThekweni Municipality. The analysis was based on participants' attitudes, knowledge, and awareness regarding water conservation

Chapter 5: This chapter displays the outcomes of the data collection process for the study's qualitative phases. It looked at and evaluated the results of semi-structured interviews with inner western community water stakeholders. The analysis was based on their attitudes, knowledge, and understanding of water conservation, as well as the options, such as credit control and debt collection strategies, that are available to address the mounting debts related to water and sanitation.

Chapter 6: This chapter summarises and offers suggestions to address the findings reported in previous chapters, as well as broad conclusions on the effectiveness of policies on household water and sanitation debt escalation at eThekweni Municipality.

1.9 Chapter Summary

The purpose of this study is to identify the primary socioeconomic and structural factors contributing to an increase in household water and sanitation debt in eThekweni Municipality, with the aim of aligning with SDG 6. Using a qualitative methodological approach, this chapter provided an overview of how one might attempt to comprehensively address the complex issues surrounding household water and sanitation debt management. The main data collection

methods for this project is semi-structured interviews. Ultimately, the findings inform strategies that promote more affordable water and foster an understanding of sustainable water management practices, directly linking to SDG 6. A more extensive literature analysis on the escalation of municipal water and sanitation debt will be discussed in the subsequent Chapter.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In South Africa, households' constantly rising water and sanitation debt, particularly in urban municipalities like eThekweni municipality, represents a potentially complex interaction between infrastructure deterioration, municipality shortages, and social and economic vulnerability. This reality has long-term implications for social justice, population health, urban sustainability, and service delivery. Including access to clean water and sanitation in international frameworks, such as Sustainable Development Goal 6, which recognises access to resources as a component of environmental integrity and human dignity, is another indication of the worldwide consensus on this problem. The chapter presents a comprehensive literature analysis that critically examines the theoretical, structural, and historical aspects of water and sanitation debt, addressing this new dilemma. It begins by placing the issue in a historical and global context, utilising comparative knowledge of industrialised states and postcolonial nations in a similar manner. The next chapter examines the various causes of rising family debt, including income disparities, ineffective administrative procedures, deteriorating infrastructure, and conflicting perspectives on water as both a resource and a right.

A critical evaluation of existing debt recovery tactics, considering their social and ethical implications, follows. The literature on preventative measures is also urged to be implemented, particularly the role that education, affordable tariffs, and creative demand management techniques play. The following section of the chapter discusses policy and regulation, examining the shortcomings of governance as well as the legislative needs that both facilitate and impede progress. To highlight the conflicts between social justice and economic rationality, the literature review concludes by examining the issue through theoretical lenses, specifically the Human Rights-Based Approach, Public Choice Theory, and Capability Approach. The chapter outlines the new controversies and research, as well as practice and policy avenues that could significantly alter how water debt is conceived and managed.

2.2 Historical and Global Context

Understanding contemporary water and sanitation governance requires situating South Africa's post-1994 policy trajectory within broader historical and international developments. This section examines the legislative and institutional reforms that shaped the democratic water and sanitation framework, alongside comparative case studies from Brazil, India, Kenya and the

United Kingdom that demonstrate varied governance models and service-delivery approaches. It further draws on lessons from post-colonial water management practices across the Global South to highlight shared structural constraints and innovative strategies relevant to developing contexts. Collectively, these perspectives provide a critical foundation for analysing debt management, service access, and policy effectiveness in eThekweni Municipality.

2.2.1 Evolution of Water and Sanitation Policy in South Africa Post-1994

With the onset of the post-apartheid era, South Africa underwent a significant shift in the management of water and sanitation needs. Before 1994, the water service was racially divided, with the services to whites occupying an urban population in those days and barring most Black South Africans, especially in the rural and peri-urban settings (SALGA, 2022). Access to water was mentioned as a fundamental human right in the Constitution of the Republic of South Africa, 1996 (1), highlighting the future trend regarding rights-based approach to service delivery. This significant ideological and policy change was achieved by excluding and modifying the concept of universal access.

By attempting to adopt inclusive water governance structures, the post-apartheid policies aimed to eliminate the inequitable infrastructure. According to the White Paper on Water Policy (1997) and the National Water Act (1998), the core principles of Integrated Water Resource Management (IWRM) are redistribution, sustainability, and participation (National Treasury, 2021). Through equal services, these institutions were intended to promote social integration and economic progress, ensuring equal access.

These, however, have been difficult to translate into practice in the municipal implementation process. Governance issues, such as under-capacitation, mismanagement, and unpredictable financing, have hindered its progress locally (Pillay and Mutereko, 2022). In addition, the Municipal Finance Management Act (MFMA) established new and stringent fiscal management measures, which, although enhancing accountability, occasionally interfered with the municipality's ability to respond to community demands, especially in informal settlements (Mugano, 2024). Due to its progressive innovation, including its free basic water program, the eThekweni Municipality in Durban has received much publicity.

Furthermore, concerns about the program's sustainability have been raised, particularly in light of the growing household debt and infrastructure overload that neutralise the program's beneficial effects (Ngcobo, 2021). The situation presents a conflict between rights-based goals

versus neoliberal fiscal realities. Even if the reforms were progressive, the lack of apartheid-era institutional fragmentation, budgetary decentralisation, and spatial planning still affects how water services are delivered today.

2.2.2 Comparative Global Case Studies: Brazil, India, Kenya, and the UK

Many nations worldwide struggle to manage water and sanitation in a way that balances justice, efficiency, and sustainability; however, the paths to success rely on institutional structures and social and economic variables. For instance, Brazil has significantly benefited from a rights based strategy since adopting its 1988 Constitution. It is a nationwide initiative, *Agua Para Todos*, aimed at increasing enrolment in underserved rural areas (Lima et al., 2021). However, corruption and economic restraint occasionally hampered the reliability of service delivery, highlighting the notion that political will alone is insufficient in the absence of accountable institutions. The decentralised Panchayati Raj system in India has granted local bodies the authority to control water services. However, inadequate investment in technology, class prejudice, and infrastructure deficiencies have been identified as key characteristics of integration (Kumar, 2022). It is interesting to note that while the Swachh Bharat Abhiyan effort has significantly increased sanitation coverage, behavioural and infrastructure gaps still exist.

One way to describe Kenya's situation is as a form of regulated liberalisation. The Water Act of 2002 enacted in Kenya established Water Services Regulatory Board (WASREB), separating the tasks of policy, regulation, and provision. This brought about clarity and improved accountability. However, the government still faces difficulties in recovering costs due to significant levels of non-payment and the political context surrounding water, which is a necessity (Boakye-Ansah, 2020). The United Kingdom's (UK's) fully privatised water sector has resulted in extensive service coverage and substantial infrastructure expenditures. Still, it is undervalued because rates have been rising while affordability protection is weak, particularly for low-income people. One criticism of such a neoliberal system is that it prioritises shareholder welfare over equity (Budds & Loftus, 2023).

These global examples serve as a valuable lesson for South Africa to learn from. Brazil and Kenya emphasise the importance of prioritising institutional coordination and clarity in regulatory structure. India highlights the value of individual mobilisation and cleanliness promotion, while the UK demonstrates how privatisation hinders the creation of equity. Thus, global comparisons suggest that the design of sustainable water governance should be grounded

in universal principles of justice, openness, and accessibility, while being tailored to each nation.

2.2.3 Lessons from Post-Colonial Water Management Models in Global South

In the developing world, colonialism continues to have a significant influence on the mechanisms of water governance. At the expense of rural communities, indigenous knowledge systems, or both, colonial rulers favoured extractive infrastructure that might enrich colonial administrative and economic centres. The new post-independence regimes inherited these biased institutions, and despite some outward appearances, these structural biases remain ingrained in the institutional culture, legal framework, and urban planning paradigms.

Post-colonial reform was centred on attempts to eradicate racial or class disparities in most of Africa and Asia, including South Africa, Kenya, Botswana, and India. However, corporate policy interests, limited funding, and weakened state competence have often hampered these efforts. For instance, despite the state's significant investment in public service delivery, the issue of affordability and sustainability has arisen in Botswana due to the framing of water as a social and economic good (Nyandoro, 2024).

Similarly, South Africa's post-1994 transition was not entirely free from the effects of colonialism. Decentralisation was typically perceived as administrative and budgetary separation rather than locally based empowerment, and regional disparities persisted due to the inherited allocation of territories and pre-existing patterns of infrastructure. In addition, the commercialisation of water services was encouraged by the worldwide neoliberal governance trend of the 1990s and early 2000s, as well as by World Bank and IMF structural adjustment policies that prioritised cost recovery over rights-based service delivery (Varma, 2021).

Nonetheless, examples of hybrid models that attempt to address historical injustices and align them with current conditions can be cited. Community-managed systems, wherein the government and non-governmental organisations support the systems that have proven resilient and accountable to their citizens in Kenya and India. However, these models usually disappear and require strong institutional and financial support. The shortcomings of formal government and minority agencies are illustrated by personal experiences in South Africa, particularly in informal settlements and the alleged self-connection practices of townships (Mottiar, 2021).

2.3 Factors Contributing to Household Water and Sanitation Debt

The literature consistently shows that household water and sanitation debt emerges from intersecting socioeconomic, institutional, and infrastructural conditions, highlighting that income volatility and structural inequality significantly constrain households' ability to meet recurrent service charges, particularly in rapidly urbanising contexts (Motsotsi, 2023). Research further identifies administrative inefficiencies, including billing inaccuracies and weak customer management, as key contributors to debt escalation. Studies also emphasise the role of infrastructure failures and climate-related disruptions, which undermine service reliability and payment compliance (Ngcobo, 2021). Additionally, debates surrounding water as a human right versus a priced commodity, combined with regulatory fragmentation, shape household attitudes and municipal revenue performance.

2.3.1 Socioeconomic Inequality and Income Volatility

Access to essential services, such as clean water and sanitation, is negatively impacted by inequality and financial instability in South Africa, which is currently one of the most unjust societies in the world. The issue is that many households in cities like Durban, where informal settlements are continuously expanding, cannot afford the cost of services due to irregular income and unstable work. Women who run their households and work in the informal economy are similarly affected by income instability, which suggests that they often pay their bills irregularly or are unaware of the debt they have accumulated (Motsosi, 2023). These individuals are more likely to accumulate debts and are less likely to benefit from indigent support systems due to either a paperless society or restrictive regulations.

Geographical development still reflects historical inequities, with more affluent, white dominated suburbs receiving dependable infrastructure and billing systems while townships and rural areas are more likely to experience irregular services and delayed maintenance. A cycle of non-payment is linked to this geographical inequality since disadvantaged families do not believe that the reliability and standard of municipal services are sufficiently satisfactory to justify payment (Ngcobo et al., 2023). On a larger macroeconomic level, rising inflation and a growing number of unemployed people mean that household financial flexibility is further diminished, and families that were previously content with a two-income-earned lifestyle are also becoming entangled in debt caused by utility bills. Therefore, the relationship between socioeconomic status and service affordability plays a significant role in the growth of

household water debt and demands comprehensive solutions that go beyond simple technical remedies, emphasising social justice and policy economics.

2.3.2 Administrative and Governance Inefficiencies

Municipalities are required to provide high-quality, reasonably priced water and sanitation services; however, the pursuit of this objective is hindered by ineffective governance. Several factors contribute to the accumulation of household debt, including inadequate billing procedures, inaccurate meter readings, poor customer service, and incorrect information. Most governments lack the capacity to maintain up-to-date debtor data or issue accurate and timely bills, according to research in this field, as done by Pillay and Mutereko (2022). This kind of act breeds mistrust and influences a general unwillingness to pay. To make matters more difficult, there has been a significant shift in the authorities' officials, which has disrupted the framework of strategic debt recovery tactics.

For instance, eThekweni municipality has significant arrears, particularly in historically disadvantaged neighbourhoods, due to the delayed adoption of smart metering and the ongoing dispute over the accuracy of the bills. The existence of institutional silos within departments that manage infrastructure, collect revenues, and provide customer services exacerbates these inefficiencies even further (SALGA, 2022). Additionally, there are reports of corruption and financial mismanagement in several areas, which compromise the legitimacy of utility bills and the effectiveness of governing institutions (Enwereji, 2025).

Policy imbalance between national and local government agencies exacerbates administrative instability. Although the Department of Water and Sanitation provides regulations, enforcement agencies have been relatively ineffective, particularly when political interests undermine them. As a result, not all debt recovery initiatives are handled similarly; in fact, in some cases, they are used as political weapons during electoral campaigns. Therefore, to increase trust, improve efficiency, and ultimately halt the rise in household debt, structural improvements should be implemented in conjunction with addressing oversight shortcomings.

2.3.3 Infrastructure Failures and Climate Stressors

One of the key factors influencing household water and sanitation debt has been inadequate infrastructure. In addition to compelling households to utilise more costly alternative sources, such as tanks or private suppliers, aged pipes, leaking reservoirs, and bursts erode public trust in municipal pipelines. Like in most of eThekweni municipality regions, infrastructure

deterioration causes non-revenue water flows to rise above 30%, which is typically passed on to customers in the form of higher tariffs (Ngcobo, 2021). Ironically, low-income communities bear the weight of the high indirect costs associated with fixing infrastructure failures, which results in both inefficient service delivery and rising costs.

Moreover, difficulties are exacerbated by climate stresses. Water is being rationed and interrupted in an unjust manner due to the increased frequency of droughts brought on by climate change, which has disrupted household water use activities and led to billing unpredictability. For instance, during a prolonged drought, providing inadequate water and unfairly charging based on inflated use might further perpetuate the idea of inequality and promote non-payment (Sutherland, 2025). On the other hand, floods have an impact on the infrastructure, cause billing cycle interruptions, and shift emergency rescue budgetary allocations to debt management.

2.3.4 Perceptions of Water as a Human Right vs Commodity

Whether water should be viewed as a market commodity or a social right is the biggest conceptual gap in discussions of water policy. The adoption of cost-recovery for profit service delivery—which is regarded as a fundamental human right as stated in the South African Constitution and the entire legislative framework—was prompted by the need to accommodate neoliberal patterns of governance and the pressure on municipalities to fulfil their financial obligations as water providers. Residents are perplexed and resentful of this coexistence, as they are told that water is a right, but they are disconnected and penalised when they fail to pay.

The Free Basic Water Policy was intended to alleviate the gap between the rich and the poor by guaranteeing a minimum amount of free water; however, it has been poorly implemented and inconsistently applied in most cases (Mahlasela et al., 2020). Budds and Loftus (2023) claim that neoliberal frameworks have shifted their emphasis from citizens to users as customers, making individual payment compliance a necessity for viability. This undermines the social compact and is a component of the resistance strategy, which also includes organised boycotts, meter tampering, and self-connection. This is particularly evident in low-income communities in Durban (Mottiar, 2021).

Policy formulations are nevertheless plagued by the dilemma of the necessity to recover charges in addition to the policy imperative of water as a right. Clear tariffs, simple appeal procedures for billing concerns, and community-based governance processes that enable communities to

contribute to the development of solutions that restore the credibility of municipal billing systems are all necessary for maintaining balance.

2.3.5 Regulatory Fragmentation and Enforcement Weaknesses

Due to the complicated regulatory environment in South Africa, household debt levels have increased. The Water Services Act, the Municipal Systems Act, and the Municipal Finance Management Act are among the key legislation and regulatory bodies that govern water services. Even though each of them plays a crucial role, there hasn't been enough coordination between them, which has caused certain agencies to implement it inconsistently and others to overlap. According to Farazmand (2023), this type of segmentation is common in informal organisations, and the absence of a legally binding framework results in policy inconsistency. It is extremely challenging to implement credit control policies effectively due to the municipality's lack of political will and authority.

The conflict facilitates selective non-compliance and fosters animosity toward injustice. Furthermore, national regulatory bodies such as SALGA and the Department of Cooperative Governance are required to provide guidelines; however, to implement them locally, they must align with local government funding and political connections. Debt write-offs, amnesty campaigns, and disconnection restrictions are less likely to be successful and provide long-term benefits if they are not supported by effective monitoring systems (National Treasury, 2021). As a result of economic reform, households are unaware of their responsibilities, rights, and conflict resolution procedures. To establish a culture of compliance, reduce debt, and win the public's trust, municipal governments must streamline their regulatory processes and enhance their enforcement capabilities.

2.3.6 Deep-Dive into eThekweni-Specific Challenges with Integrated Local Data

The eThekweni municipality, which includes the city of Durban, is a unique microcosm of South Africa's larger water debt issue. Given the significant gap between urban and rural areas and the region's population exceeding 3.5 million, the region faces challenges of high demand and limited capacity. According to Ngcobo et al. (2023), a substantial percentage of eThekweni municipality residents fail to pay for municipal services due to a combination of institutional weaknesses, socioeconomic inequality, and improper municipal service delivery.

One major issue is that service delivery and billing are made more difficult in informal settlements due to a lack of formal infrastructure. Many residents share standpipes or self-connect to existing infrastructure, resulting in usage patterns that are challenging to measure and account for. Furthermore, due to aging meters or limited access to metering infrastructure, billing systems sometimes fail to record precise consumption, resulting in estimated billing and disputes (Fu et al., 2023).

Furthermore, compliance has become inconsistent due to political rivalry over the disconnection policy, which has made municipal officials reluctant to implement harsh debt recovery measures in underprivileged regions. Although NGOs and non-profit organisations have stepped in to support debt repayment or offer a limited range of services, these initiatives remain dispersed and lack sufficient funding. Prepaid and smart metering solutions have been tested by the municipality, but their adoption has been sluggish due to criticism and the large initial costs (Okoli and Kabaso, 2023). The experience of eThekweni municipality underscores the need for a multi-stakeholder, context-specific approach to debt management that incorporates interdepartmental cooperation, accurate data, and community engagement. Technical advancements and legislative changes alone won't be enough to stop the rise of household water and sanitation debt in the absence of these components.

One of the main issues is the lack of formal infrastructure in informal settlements, which makes it challenging to bill residents and offer services. The current systems are widely accessible to residents, and many of them use community standpipes, which results in consumption patterns that are difficult to measure and bill. Furthermore, old meters or a lack of access to metering infrastructure can cause inefficient billing systems to fail to accurately measure consumption, leading to estimated billing and conflicts (Fu et al., 2023).

Furthermore, because local government officials are unable to conduct the more aggressive debt collection techniques in low-income communities, the politics of disconnection have rendered its implementation uneven. Non-governmental organisations and civil society have responded by mobilising or providing limited facilities to demand the cancellation of debts, although their actions are dispersed and poorly organised. The municipality has also experimented with prepaid and smart metering systems, but due to initial capital costs and resistance, adoption has been slow (Okoli and Kabaso, 2023).

Municipalities in South Africa have employed various approaches to recover the money owed due to rising household water and sanitation debt. For instance, drastic measures such as blacklisting offenders, disconnecting utilities, and outsourcing debt collection were implemented in Johannesburg (SALGA, 2022). Despite temporarily raising income, these tactics sparked social discontent and legal disputes, especially in areas with low socioeconomic status (Pillay and Mutereko, 2022). An illustration of this is the case of "Tshwane and its operation Tshwane ya Tima," in which public relations activities accompany widespread disconnections (Mugano, 2024). Although there was some success in recovering due amounts, critics argued that the campaign had a negative impact on poor people in urban areas, exacerbating existing inequalities (Motsosi, 2023). Conversely, eThekweni municipality has concentrated on a strategy that combines enforcement and support tactics, such as amnesty windows (Ngcobo, 2021). This considers the socio-economic circumstances of the residents as well as the financial needs and pressures on the municipality.

2.4 Debt Recovery Mechanisms: Theory and Practice

The literature on debt recovery highlights the complex interactions among policy, technology, and behaviour. Disconnection policies remain widely used but raise significant ethical concerns. Smart metering improves monitoring yet faces affordability challenges. Amnesty programmes and community-based repayment models enhance trust, while behavioural economics explains how perceptions and biases influence household repayment decisions.

2.4.1 Role of Disconnection Policies and Their Ethical Implications

In the debate over equitable water management, the disconnection policy has become a point of disagreement. The ethical implications of the given strategy remain controversial, despite municipalities being legally permitted to halt services for non-payment (Budds and Loftus, 2023). Cutting off water to households that are unable or unwilling to pay amounts to a serious violation of human rights, dignity, and constitutional duties to provide an affordable water supply (Riddle, 2022). Applying these rules frequently makes it challenging to distinguish between those who are temporarily experiencing financial difficulties and those who have been classified as permanent delinquents (Mottiar, 2021). Since disconnections exacerbate social marginalisation and health concerns for the populace, critics argue that they constitute a form of punishment predominantly experienced by the poor (Mahlasela et al., 2020). Additionally, these restrictions may be applied randomly, giving households little to no notice before the cut-off. The fact that many of these households reside in marginalised neighbourhoods or informal

settlements, where municipal service delivery has never been sufficient, exacerbates the ethical dilemma even further (Ngcobo et al., 2023).

2.4.2 Smart Metering: Opportunities and Challenges

Smart water metering technologies offer promising opportunities to improve municipal collections and service delivery efficiency. Households may trace their usage, identify leaks early, and better manage their water budgets thanks to the devices' real-time consumption monitoring capabilities (Fu et al., 2023). In turn, municipalities benefit from increased data collection possibilities, reduced labour requirements, and more effective billing systems (Okoli and Kabasa, 2023). In theory, this would make the system transparent and more open to both suppliers and consumers. However, significant questions have been raised about the smart meter's actual operation. In low-income areas, households that fail to meet their monthly top-up responsibilities are indirectly removed from the service through prepaid meters, which effectively function as an indirect disconnection method (Pillay and Mutereko, 2022). Additionally, this investment entails installing and maintaining smart meters, which is a highly technical and capital-intensive task for which most municipalities lack the necessary skills (Mugano, 2024). Another obstacle is the lack of knowledge about technology, especially among older individuals or those in areas with limited access to educational resources.

2.4.3 Amnesty Campaigns and Community-Based Repayment Models

Community-based collection techniques and amnesty programs are more humane ways to pay back municipal debt. Amnesty is the partial or complete cancellation of past debts, subject to certain requirements that households must meet, such as installing prepaid meters, paying future bills on time, or enrolling in financial literacy classes (Enwereji, 2025). The dynamic between the municipalities and the indebted residents will be reset by such campaigns, which will open up opportunities for mutual trust and cooperation. Furthermore, community-based payback models take it one step further by incorporating procedures for enlisting the help of civic organisations, local leadership, or ward council members in negotiating payments that are specifically tailored to the community's needs (Motsosi, 2023). Such types of inclusive frameworks would help communities develop a sense of ownership and accountability, increasing the likelihood of ongoing compliance. However, effective communication, appropriate oversight, and municipalities' capacity to set up and sustain decentralised decision-making processes are all critical to the success of such models.

2.4.4 Psychological and Behavioural Economics Insights on Utility Debt Repayment

A more thorough understanding of consumer behaviour can be gained by applying behavioural economics and psychology to the debt recovery process. Classical economic theories assume that people are logical and make decisions based on extensive cost-benefit analysis. However, behavioural research indicates that consumers often exhibit cognitive biases, including present bias, where immediate needs take precedence over long-term consequences, and loss aversion, which can make penalties appear significantly more severe (Farazmand, 2023). Customers of utilities may also neglect to pay their bills on time due to stress, disorganisation, or a lack of confidence in the billing system. One way to accomplish compliance is through behaviour guided interventions, such as remittance reminders, social norm messaging, simplified billing, and small incentives for on-time payments (Riddle, 2022). For instance, discussing water bills in relation to the community's benefits or the enhancement of everyone's health can give the reader a sense of civic or community duty, while personalised messaging may increase the reader's sense of fairness and openness. Additionally, by offering flexible payment plans and opt-out options, debt settlement programs might persuade more customers to embrace sound financial practices.

2.5 Preventive Strategies for Debt Escalation

In this section, the emphasis is on discussing preventative strategies for debt escalation. Evidence from the literature suggests preventive measures can be categorised in five key themes, including education and awareness campaigns, tariff structuring, innovations in demand management and conservation, financial literacy interventions, as well as the role of NGOs in preventing debt escalation.

2.5.1 Education and Awareness Campaigns: Effectiveness and Barriers

One of the main strategies for reducing household water and sanitation debts is prevention, which includes education and awareness campaigns. These programs often seek to modify consumer behaviour by educating them about water conservation, billing, and the implications of non-payment. However, the local context, the delivery methods, and the level of trust in the local governments all have a significant impact on these campaigns (SALGA, 2022). Traditional media outreach efforts are generally less successful in most South African municipalities due to low literacy rates, cultural barriers, and the digital divide (Ngcobo, 2021).

Additionally, households in the outskirts of cities or informal settlements are likely to be less exposed to verified information, which increases the likelihood that they will receive false information or become disengaged (Mottiar, 2021). Campaigns that involve participatory methods (such as community discussions or theatrical treatments) are probably going to have a greater impact, especially if they are run under the direction of reliable community members (Pillay and Mutereko, 2022). However, due to institutional fragmentation and resource limitations, scaling their customized strategy has proven difficult. Furthermore, without simultaneously increasing billing accuracy and enhancing service reliability, a well-designed campaign has little chance of succeeding. Therefore, if education is to be employed as a deterrent against debt accumulation, it should be integrated into a larger community of transformation.

2.5.2 Tariff Structuring and Pro-Poor Policy Options

The structure of municipal water tariffs plays a critical role in identifying defaulters and payment patterns. Theoretically, by imposing higher rates on large quantities of consumption and offering subsidies to low-income households while consuming basic amounts, progressive or block tariffs aim to strike a compromise between social equality and financial sustainability (Mahlasela et al., 2020). However, in practice, the tariff plans being implemented are of low quality, which exacerbates the affordability crisis, affecting the most disadvantaged the most. Equal pricing structures are frequently implemented by municipalities without considering factors such as informal housing, income diversity, or dwelling size (Motsosi, 2023). On the one hand, equitable measures such as assistance rates, indigent registrations, and subsidies for commercial customers have been tested with varying degrees of effectiveness in cities like eThekweni and Cape Town (Boakye-Ansah, 2020). Critics claim that political hostility to distributive policies, administrative inefficiencies, and a lack of reliable statistics justify these interventions (National Treasury, 2021). Furthermore, residents may become confused or even disrespectful if subsidies—even those with good intentions—are not communicated clearly (Budds and Loftus, 2023). It is vital to address these difficulties not only through a more inclusive tariff design but also by increasing collaboration across the municipality's financial, technical, and community-facing departments.

2.5.3 Innovations in Demand Management and Conservation

Another method to reduce the likelihood of household debt is to use smart water demand management. Utilising technology tools, such as leak detection systems, smart meters, and

water-saving fixtures, can significantly reduce household expenses by lowering consumption (Fu et al., 2023). Other initiatives, including the Durban Water Recycling Project and low-income housing conversion projects, have demonstrated the ability to save money in eThekweni municipality; however, they have not yet gained widespread adoption due to financial and technical capacity constraints (Ngcobo et al., 2023). At the neighbourhood level, behavioural nudges such as visible dashboards of consumption and real-time feedback on usage have also shown two-fold conservation (Smith and Ray, 2019). Innovation alone, however, could not bring about change; rather, solutions should target the root causes of development constraints, such as aging infrastructure, irregular service delivery, or public mistrust. In this sense, some homes now view new gadgets (such as prepayment meters) as instruments to monitor or exclude, rather than as tools to empower (Mottiar, 2021). Furthermore, in most situations, donor-based funding and divided governance cannot be incorporated into long-term policy (Pillay and Mutereko, 2022). Therefore, demand management should be implemented as one of the multifaceted strategies, alongside community involvement, institutional reform, and long-term investments in infrastructure development.

2.5.4 Financial Literacy Interventions

The value of financial literacy as a component of sustainable water service delivery is growing. Unwanted non-payments and debt accumulation in low-income neighbourhoods may result from a lack of knowledge about how utility billing works, including fixed-variable bills, bill readings, and arrears charges (Enwereji, 2025). The purpose of such financial literacy programs is to clarify the myths about them and provide households with the tools they need to manage their utility bills effectively (Riddle, 2022). Depending on local conditions and available resources, the interventions may include sessions, educational curricula, community radio segments, and mobile app lessons. According to research, households are more likely to practice conservation and make payments if they comprehend the connection between water usage, billing, and the sustainability of long-term service delivery (Ngcobo, 2021). However, there are situations in which literacy initiatives alone are insufficient. Transparency, trust, and timely service delivery are the broader foundations of their effectiveness. When the billing processes are assumed to be random or when meter faults are recognised, even the most educated residents may become discouraged (Mahlasela et al., 2020). Therefore, until a change in behaviour is established, financial literacy should be incorporated into the culture of accountability and responsive governance.

2.5.5 Role of NGOs and Civil Society in Prevention

Non-governmental organisations (NGOs) and other civil society actors have a responsibility for preventing household debt from increasing, but they often fail to reach their full potential. These organisations, which offer advocacy, mediation, education, and technical assistance, frequently find themselves in areas where municipal governments lack the necessary expertise (SALGA, 2022). NGOs have played a crucial role in improving water justice, particularly in marginalised communities where service delivery has historically been inadequate (Sutherland, 2025). By advocating for participatory budgeting, holding public hearings, and ensuring open billing practices—all of which simultaneously empower the people—civil society can hold towns accountable (Farazmand, 2023). In Durban, local groups have facilitated mediation between water officials and individuals facing eviction due to non-payment of their bills. In certain situations, this has prevented evictions, while in other cases, it has facilitated the arrangement of repayment conditions (Ngcobo, 2021). However, due to financial constraints, political resistance, or a lack of recognition in decision-making processes, the oppression of such individuals does not occur equally among municipalities or generally falls short (Motsosi, 2023). A more thorough and compassionate approach to debt prevention, one that prioritises co-production, dignity, and social solidarity alongside fiscal prudence, can be achieved through enhanced collaboration between local governments and civil society.

2.6 The Role of Policy and Regulation

Research shows that policy and regulation serves an important role in water management. The discussion provides information on Constitutional and legislative mandates as well as analysis of regulatory performance such as National Treasury, DWS, and SALGA. Another key policy and regulation involves governance gaps, decentralisation process, and how national framework enable reform.

2.6.1 Constitutional and Legislative Mandates

South Africa's constitutional and legislative frameworks provide a strong foundation for the governance of water and sanitation. All residents are entitled to obtain adequate water under Section 27(1)(b) of the Constitution, and municipalities are empowered to deliver services in a sustainable way under Section 152(1)(b). This right is operationalised by the Water Services Act 108 of 1997, which requires water service authorities and suppliers to guarantee that everyone has access to essential water services that are effective, reasonably priced, and sustainable (National Treasury, 2021). The Municipal Finance Management Act (MFMA) of

2003, which regulates how municipalities manage their municipal finances, particularly in terms of budgeting, revenue collection, and debt collection, is a supplement to this (SALGA, 2022). Together, these statutes form the legislative foundation for the provision of water services. However, the legal framework often undermines local capacity and governance, which does not always align with the legal system's lofty objectives, leading to uneven application (Motsosi, 2023). Municipalities' understanding and implementation of policy imperatives are at odds since the MFMA is more focused on financial efficiency than the Water Services Act, which prioritises access.

2.6.2 Analysis of Regulatory Performance: National Treasury, DWS, SALGA

The number of regulatory agencies participating further complicates this scenario. Financial sustainability is a top priority for the National Treasury; a city or municipality cannot be left in poverty and unable to provide its services without endangering its financial stability. On the other hand, the Department of Water and Sanitation (DWS) focuses on service availability and quality. SALGA is an intermediary organisation that can support and advocate for municipalities in the interim; however, it does not directly address problems (Pillay and Mutereko, 2022). Priorities typically clash because of such a collapse. For instance, the DWS's objectives to advance universal access may conflict with the National Treasury's need to fully collect the costs; this is especially relevant in underprivileged areas where individuals lack the resources to cover the entire cost (Mugano, 2024).

2.6.3 Governance Gaps: Municipal Autonomy vs. National Oversight

South Africa's decentralised government system empowers communities to develop and implement their own water and sanitation regulations. There are two sides to this independence. It opens the door for contextualised and locally responsive treatments, but it also raises the risk of significant variations in performance and capacity (Aiyede, 2023). Most municipalities lack the institutional soundness, administrative capabilities, and technical capacity necessary to fulfil their constitutional responsibilities. As a result, national oversight organisations frequently intervene, creating a distorted channel of accountability. The lack of standardised standards by which performance can be evaluated further complicates this relationship, allowing for discretionary actions that do not advance national goals (Mahlasela et al., 2020).

2.6.4 Decentralisation and the Unintended Consequences of Local Discretion

Decentralisation was intended to empower service delivery, allowing local governments to tailor their procedures to the community's specific needs. In reality, however, it has temporarily

exacerbated other underlying disparities. Municipalities have varying financial bases, technical staff competencies, and governance cultures, resulting in patchwork practices that lack coherence (Ngcobo et al., 2023). Due to this discretion, utilities have occasionally taken punitive actions, such as rapidly disconnecting accounts for non-payment, which disproportionately affects those with low incomes (Mottiar, 2021). In others, it has sparked new ideas, such as community-based water committees, which are only just beginning to grow because there isn't an institutional framework in place to support them. When comparing the construction of metro areas like Johannesburg to smaller canters in rural regions, the difference is particularly noticeable.

2.6.5 How National Frameworks Enable or Hinder Reform

Despite outlining a comprehensive set of goals and objectives, South Africa's national frameworks are frequently undermined by inconsistent implementation. The purpose of planning instruments like the Medium-Term Revenue and Expenditure Framework (MTREF) and the Integrated Development Plan (IDP) is to align national priorities with local objectives. However, many municipalities use compliance checklists and other similar frameworks rather than strategic planning (National Treasury, 2021).

Furthermore, the complex details of the local situation are frequently overlooked by national frameworks. For instance, even though the Free Basic Water policy aims to provide a specific amount of water to an underprivileged family at no cost, its implementation is uneven, as certain cities lack information about who is eligible to receive the policy and who is not (Ngcobo, 2021). In addition to undermining the reform process, this discrepancy between policy and execution also damages the government's credibility. All things considered, South Africa's legislative and regulatory framework demonstrates a robust yet fragmented approach to governance in the areas of water and sanitation. The constitutional protections and legislative requirements are straightforward because their purpose is clear; nonetheless, to close the gap between policy and practice, there must be strong coordination, capacity building, and a strong political will.

2.7 Ethical, Social Justice, and Human Rights Perspectives

In this section, the emphasis focus on ethical, social justice, and human rights perspectives. The focus is on intersectionality, capability approach, human dignity, ethic of disconnection, rights-based models, and efficiency-based service delivery models.

2.7.1 Critical Lens: Intersectionality

Water and sanitation services are difficult to provide in South Africa due to the intersection of inequality. Geographical location, gender, and race are other factors that contribute to the lack of access to essential services. Some of the reasons why historically marginalised communities do not obtain enough services are the geographical legacy of apartheid and gendered roles, which place the duty of providing water services on women (Motsosi, 2023). In informal settlements like the one in eThekweni municipality, the load is further exacerbated by inadequate infrastructure and administrative carelessness. Women and children are more vulnerable to the health hazards and social disgrace of inadequate sanitation, particularly in households headed by women (Boakye-Ansah, 2020). Geographical factors are particularly important, as households in informal and outlying urban settlements are often excluded from the formal planning system, resulting in inadequate service delivery and absent debt collection (Ngcobo, 2021). The idea that cumulative oppression results in unequal access and mounting debt, perpetuating cycles of poverty and marginalisation, can be understood from an intersectional perspective. Policymakers must also employ integrative policies that consider both social and spatial factors, in addition to technical and financial ones.

2.7.2 Capability Approach as an Ethical Framework

The founders of the Capability Approach, including Amartya Sen and Martha Nussbaum, outline a robust ethical framework for researching water and sanitation debt. Justice is examined in light of people's freedoms to act in ways that are consistent with their lives and that they will value, rather than only the way resources are distributed (Riddle, 2022). The inadequacies of current service models, which focus on service levels rather than actual opportunities for human flourishing, become apparent when this method is applied to the South African setting. When impoverished households incur debt due to strict billing practices or unreliable services, their capacity to maintain their health, dignity, and economic involvement is limited. According to Lima et al. (2021), sustainable development should be redefined as the expansion of liberties, which necessitates institutional support that fosters skills rather than merely providing goods. Given this, the Capability Approach advocates for systemic improvements that emphasise the establishment of enabling conditions rather than imposing financial restraints that compromise households' long-term autonomy. Similar to democratic governance models, it provides citizens with the opportunity to participate in the development

and evaluation of services, making them more ethically sound and tailored to the specific situation.

2.7.3 Human Dignity and the Ethics of Disconnection

Another ethical dilemma with serious consequences is the disclosure that failure to pay could result in the termination of your water supply. Access to water is essential for maintaining human dignity and existence, in line with the socioeconomic rights outlined in the South African Constitution (SALGA, 2022). The most impoverished are particularly affected by disconnection laws, which are often used as debt collection techniques. In other words, they penalise poverty. This type of behaviour, according to academics such as Ngcobo et al. (2023), leads to social separation and mistrust of the government, particularly among residents in urban areas that lack adequate communication or alternative options. Furthermore, those policies may be implemented in a broader framework of institutional inefficiency and infrastructure neglect, where households are penalised for systemic errors beyond their control (Mahlasela et al., 2020). Additionally, as it contradicts the principles of justice and equity, it is morally wrong to deny someone access to water simply because they are unable to pay. It raises health risks, especially in areas where people are already impacted by crowded streets and unsanitary surroundings. A rights-based ethic would require the state to use debt recovery methods that do not violate fundamental dignity and to provide a minimum of free basic services as specified by policy. This stance is also supported by international human rights frameworks, which would position water access as a fundamental right rather than a commodity that may be sold.

2.7.3.1 Indigent Policy

The municipality faces serious socioeconomic issues, including poverty, unemployment, and inequality. It acknowledges that many homes still need government support to ensure that everyone has access to essential services. An Indigent Policy was put into place to provide qualifying low-income households with free necessary services. The Republic of South Africa's Constitution (Act 108 of 1996) mandates the provision of basic services, which is consistent with this strategy (eThekweni Municipality, 2025). Therefore, the Indigent Policy is a strategic plan of intervention to mitigate the situation and to urge families with limited resources to live within reasonable means of consumption. Additionally, its purpose is to guarantee that the Municipality fulfils its constitutional duty outlined in the Bill of Rights. eThekweni Municipality Water and Sanitation Directorate must guarantee that, following the approval of

the indigent support application, flow limiters are available and installed at the economically disadvantaged household.

A variety of concerns afflict the municipality's indigent support system, including the inability to identify households with low incomes, incomplete indigent registrations, and ambiguous benefit application processes. It is challenging to evaluate progress and improve results due to the program's lack of efficient monitoring and assessment. Furthermore, there are delays and inefficiencies due to the lengthy application and verification process. The municipality's Tariff, Credit Control, Debt Collection and Credit Control Policy, as well as Rates Policies must be in line with the latest regulations (Pillay and Mutereko, 2022).

2.7.4 Rights-Based vs Efficiency-Based Service Delivery Models

The efficiency-based and rights-based service delivery paradigms are in contradiction with one another. The rights-based model also emphasises the state's moral obligation to provide universal access to water, which is a fundamental human right. In contrast, the efficiency model views water as a product that is used, with its top concerns being cost recovery, performance standards, and economic viability (Budds and Loftus, 2023). Since neoliberal reforms have facilitated the advancement of outsourcing, smart metering, and disconnection policies in municipalities like Johannesburg, this pushback is particularly noticeable there. That might increase revenue collection, but such actions merely make households more excluded and indebted (Varma, 2021). Furthermore, an overemphasis on cost-covering may deter funding for proactive measures to maintain infrastructure and create access plans, thereby increasing systemic inequality (Farazmand, 2023). To maximise efficiency while balancing equity and justice, a preferable option would be to combine the right to imperative with sound management techniques. To close this gap, policy designs that support the integration of social justice concepts into municipal governance operational models must consider not only that water is a resource, but also that it is essential to life and dignity. The provision of ethical services should be firmly anchored in ensuring that disadvantaged populations are not severely impacted, while also being sustainable, upholding human rights, and promoting practical governance.

2.8 Theoretical Framework Deep Dive

Theoretical framework is the blueprint that guide, build, and support research (Varpio, Paradis, Uijtdehaage and Young, 2020). It serves the purpose of defining how philosophical,

epistemological, methodological, and analytical explanations (Babbie, 2020). In this study, theoretical framework was used to structure, guides, and establish coherent explanations of relationships and phenomena. This study used four theoretical frameworks including capability approach, public choice theory, human rights-based approach, as well as convergence and divergence in water governance.

2.8.1 Capability Approach: Practical Application in Poverty-Stricken Urban Contexts

By focusing on what people can be and accomplish rather than what they have access to or resources, the Capability Approach goes beyond traditional measures of progress, drawing upon the works of Amartya Sen and Martha Nussbaum. South Africa's water and sanitation debt, particularly in the underprivileged urban areas, provides a solid foundation for evaluating the effectiveness of policies in the country. The Capability Approach would not typically ask whether households have been given a minimum water quota; rather, it would seek the real answer, which is whether a person can regularly enjoy clean water in an economical manner and with dignity. Lima et al., (2021) state that infrastructure indicators, rather than human wellbeing, are the primary focus of urban water system design in most developing nations. This is the situation in eThekweni municipality, where service coverage statistics may show some improvement, but in practice, service delivery is severely disrupted, bills can vary greatly, and tariffs are excessively high, jeopardising household finances (Riddle, 2022). Consequently, policy models that prioritise the long-term enhancement of empowerment are promoted by the Capability Approach.

2.8.2 Public Choice Theory: Critique and Application in South African Governance

Politicians and other public officials are viewed as self-seeking agents who are constrained by the structures in which they operate, according to some products of economic thought, such as Public Choice Theory. This theory highlights some of the most significant inefficiencies and potential conflicts between the public interest and bureaucratic behaviour in South African water governance. While criticising the theoretical model's basic understanding of reason, Self (2021) confirms that the Public Choice Theory can be useful in demonstrating how favour networks, vote-seeking strategies, and similar practices often obstruct prospects for equitable

service delivery. Ericksson (2022) also notes that at the state level, the decision-making process is often dominated by the interests of elite stakeholders, rather than those of vulnerable groups.

The upgrading of informal settlements in eThekweni municipality has sometimes been placed second in terms of priorities, based on political alliances and institutional capture, which has favoured prioritising large-scale infrastructure. As Aiyede (2023) notes, weak accountability systems further exacerbate such distortions by basing performance measures on the amount of the budget spent, rather than on substantive social outcomes. Additionally, Ericksson (2022) notes that the interests of privileged stakeholders often dominate state-specific decision-making processes, leaving vulnerable individuals excluded. Due to institutional capture and political relationships that prioritize large-scale infrastructure, the improvement of eThekweni municipality's informal settlements has occasionally been ranked second in terms of priorities. According to Aiyede (2023), ineffective accountability mechanisms exacerbate these distortions by basing performance metrics on budgetary expenditures rather than on real social outcomes.

2.8.3 Human Rights-Based Approach: Tensions between Policy and Practice

Water availability is not a conditional service, but rather a fundamental human right according to the Human Rights-Based Approach (HRBA). It is ingrained in the South African Constitution and aligns with globally recognised publications such as the United Nations General Comment No. 15. However, there are issues with applying this normative standard to actual practice. Boakye-Ansah (2020) highlights inconsistencies in the motorisation of free basic water programs in municipalities with fiscal deficits. Conditionalities in service delivery pose a serious problem because non-payment renders the household ineligible for the remaining support, thereby endangering the universality of the institution. Since water has been traded against the right in two ways—through metering and disconnection—Budds and Loftus (2023) reject the neoliberal implications of the South African water policy. Additionally, the poor have very limited access to the legal path through the refusal of service, which fosters systemic unfairness. Therefore, the HRBA necessitates a fundamental rejection of the notion that water is a source of income and a shift in emphasis to acknowledge that it is a public good for which states should have a long-term financial interest and community involvement.

2.8.4 Convergence and Divergence in Water Governance

The Human Rights-Based Approach, Public Choice Theory, and Capability Approach all offer cross-complementary readings on the complexities of water and sanitation debt, despite their

own methodological backgrounds. The focus on criticising technologically driven, hierarchical forms of governance that disregard lived experience is what unites them (Farazmand, 2023). All three theories advocate for transparent procedures, social justice-based policies, and participatory government, either directly or implicitly. However, their philosophical presumptions and methodological focus diverge. The Capability Approach calls for a shift from needs-based policies to ones that promote freedom and place a strong emphasis on agency and empowerment. In response, the HRBA proposes a juridical and normative approach to responsibility that calls for requirements that are not accepted. On the other hand, the Public Choice Theory offers a practical counterargument by cautioning against the idealistic notion of a favourable state and advocating for the establishment of institutions that would curb self-serving behaviour.

Such a discrepancy can be observed in real-world policy recommendations. For instance, Public Choice Theory raises concerns about ethical risk and suggests co-payment systems to protect financial sustainability when the HRBA requires access for everyone, regardless of cost. As the interests are aimed at adaptive models that can sustain the minimum guarantees and build user capacities, it would be the mediation of this conflict with the Capability Approach. In the case of eThekweni municipality, where the ruling parties have alternated between technological and popular factions, a compromise between the two extremes may offer the solution. Prioritising dignity, user empowerment, and the planning of institutional distortions—all of which are intertwined with the causes of water and sanitation debt—would be a more sensible way to create integrated policies. Ultimately, these theoretical frameworks are not mutually exclusive; rather, they are most effectively used in conjunction, as they provide a multidimensional perspective on reforming municipal service delivery in a manner that is both ethical, effective, and equitable.

Ultimately, these theoretical frameworks are best utilised in conjunction rather than in opposition to one another, as they offer a multifaceted perspective on how to improve municipal service delivery in a manner that is simultaneously moral, efficient, and equitable.

2.9 Future Directions in Literature

Future literature highlights growing debates on adaptive, equity-focused water debt management. Scholars emphasise integrating climate-adaptation strategies into municipal policies and advancing the use of artificial intelligence and predictive analytics to enhance

forecasting, customer risk profiling, and early-warning systems, enabling more resilient and data-driven debt-management approaches.

2.9.1 Emerging Debates

The way water-related topics are discussed around the world has undergone significant changes due to the commodity nature of water, particularly in areas with highly politicised and uneven access to water. According to some academics (Budds and Loftus, 2023), the notion of water as a public resource is undermined by neoliberalism, which defines it as an economic commodity. In South Africa, this trend has contributed to the rise of water justice movements, which demand equal access to water and oppose market-driven water policies.

The movements highlight structural injustices, coordinate resistance to disconnection policies, and support participatory government models. Commodification is no longer just a topic of academic discussion; it has now permeated civil society discourse, resulting in calls for the deprivation of water infrastructure and the restoration of governmental obligations pertaining to universal access (Varma, 2021). The water justice movements also introduce the gendered and racialised dimensions of access. For instance, Black women are frequently adversely affected by informal settlements and the strain of managing unpredictable water systems. These movements focus on water as a social and ecological entitlement, promoting equitable measures that restore historical imbalances to contemporary balances. These frameworks of justice and their potential to influence policy and enhance community resilience should be further explored in the future steps of the research.

2.9.2 Integration of Climate Adaptation into Debt Management Policies

Climate change is adding complex risks to water and sanitation infrastructure, which exacerbates service unavailability and raises the risks of household indebtedness. Climate change manifests as droughts, floods, and variable rainfall, which overwhelm municipal systems and decrease revenue forecasts, making it difficult for municipalities to ensure steady service (Ngcobo et al., 2023). To this effect, much agreement has emerged that the management of debt cannot be dissociated from climate adaptation planning. Incorporating climate resilience into debt plans implies preparing for service disruptions, developing flexible models for charging bills, prioritising infrastructure improvement in vulnerable areas, and settling. Complex hazards associated with climate change are being added to the water and sanitation infrastructure, which increases the likelihood of household debt and worsens service unavailability. Droughts, floods, and fluctuating rainfall are among the effects of climate

change that strain municipal systems and reduce revenue projections, making it more challenging for municipalities to maintain consistent service (Ngcobo et al., 2023). Considering this, there is a broad consensus that debt management and climate adaptation planning are synonymous. Developing flexible bill charging structures, anticipating service interruptions, and prioritising infrastructure development in vulnerable communities and locations are all necessary to incorporate climate resilience into debt planning.

Scholars like Lima et al. (2021) think about implementing adaptive governance models that integrate ecological sensing into financial strategies. In municipalities like eThekweni municipality, this kind of integration could help alleviate the dual burden of debt cycles and climatic shocks. Therefore, the literature that follows should examine the institutional capacity required to implement these models, as well as the roles that political will, technical expertise, and financial constraints play in determining the outcome. It is also necessary to establish a normative framework that highlights climate adaptation as a social justice issue, strongly linked to household vulnerability and economic instability, in addition to being an environmental necessity.

2.9.3 Role of Artificial intelligence and Predictive data analytics in municipal services

Artificial Intelligence (AI) and predictive data analytics have the power to fundamentally alter how municipal water services are managed. According to Fu et al. (2023), AI systems can enhance infrastructure monitoring, predict service failures, and optimise billing rates by identifying overuse or misuse in real-time. This capability enables indebted towns to adopt a proactive approach to addressing arrears before they become unmanageable. As an additional illustration, in the event of a non-payment risk, early warning systems' data can be used to identify potential impacted homes, and governments would be prepared to implement specific payback plans or service modifications. In their discussion of the South African scenario, Okoli and Kabaso (2023) note that the introduction of AI-based platforms and smart water metering systems has already led to further changes in how cities function in nations like Johannesburg. However, the social equity viewpoint should be applied when observing the use of such technology. Additionally, poorly implemented data-driven solutions run the risk of perpetuating the status quo, particularly in low-income areas with limited or non-existent digital infrastructure.

Furthermore, even while AI has the potential to be efficient, it raises ethical concerns about data ownership, spying, and unfair profiles for various groups. To be held accountable, municipalities must maintain transparency in their records for governance. This implies that the application of AI and the socio-technical ensemble must be thoroughly examined in the future creative agenda, not just in areas where innovation is feasible, but also in those where exclusion is a real possibility. This includes researching public-private partnerships, improving capabilities, and community-based feedback systems that integrate public input into technology governance.

In the future, interdisciplinary interventions that integrate political economy, environmental science, and digital governance will be necessary to gain the greatest understanding of the future of municipal water services. Only in the face of total technological, climatic, and social complexity can academics make significant contributions to the development of inclusive, resilient, and equitable water debt management systems.

2.10 Chapter Summary

This chapter critically assessed the diverse research on household water and sanitation debt management, with a focus on South African municipalities. According to the review, historical legacies, socioeconomic status inequality, and complex policy frameworks are all closely linked to water governance. The objectives of universal access and financial sustainability remain at odds despite the progressive policymaking of water and sanitation since 1994. Although there is no single model that can be applied in every circumstance, cross-national examples highlighted the importance of integrating social justice and good governance.

The main causes of rising household debt have been structural inequalities, ineffective governance, inadequate regulatory frameworks, and systemic economic inequalities. Despite their many variations, municipal debt recovery procedures have typically fallen short of striking a balance between the necessity of raising money and ethical considerations surrounding its collection, particularly given the adverse effects of the disconnection policy on society's most vulnerable communities. Although preventive measures, including educational campaigns, restructured tariffs, and financial literacy interventions, show promise, their efficacy depends on increased institutional and community support.

The chapter's reflection on the policy and regulation systems complicates the fundamental absence of governance, especially when it comes to local authority versus national power. The

interrelated capability approach and human rights principles of ethical practice highlight the need to challenge efficiency-based models and integrate social equality into service delivery patterns. Theoretical viewpoints also clarify how governance-related concerns intersect with normative standards of justice and the implementation of policy.

The emerging trends in literature highlight the unresolved issues surrounding the commodity value of water, the integration of climate adaptation plans into debt adjustment, and the creative potential of artificial intelligence in urban services. However, there are still significant gaps in the studies concerning the implementation of an integrated climate-finance policy, the ethical adaptation of technology in disadvantaged areas, and the long-term concerns about the effects on grassroots water justice movements. These gaps serve as the foundation for Chapter 3, which will explain the methods used to investigate the household water and sanitation debt in eThekweni municipality.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The methodology plan of this dissertation was carefully designed to question the efficacy of policies regulating the growth of household water and sanitation debt in the eThekweni Municipality, a pressing issue given the growing number of arrears exceeding R4.2 billion (National Treasury, 2025). Sreekuma (2025) notes that the research methodology refers to the techniques and procedures used to collect and analyse data related to a specific study topic, whereby the researcher plans their study to utilise selected study tools to achieve their goals. The qualitative paradigm is based on an interpretivist lens, where subjective narratives are prioritised, allowing for an in-depth exploration of socio-economic complexity, structural constraints, and cultural foundations that cannot be fully captured by quantitative measures (Creswell and Poth, 2022). This methodology aligns with the study's objectives: to identify the factors contributing to debt escalation, assess the effectiveness of the policy, and determine solutions to the problem based on Sustainable Development Goal 6 (SDG6) of achieving universal access to water (United Nations, 2025).

To ensure a variety of lived experiences, semi-structured interviews are the foundation for engaging 15 purposely chosen participants (a combination of residents and municipal stakeholders) from the Inner West Region, thereby capturing a range of experiences. Data triangulation involving the use of secondary sources, such as local policies and academic literature, improved comprehensive knowledge (Saunders, Lewis, and Thornhill 2023). The welfare of the participants was protected by ethical rigour that is supported by the approval issued by the UKZN Humanities and Social Sciences Research Ethics Committee. NVivo enabled thematic analysis, which strengthens the results and makes them transferable to the contextual limit (Braun and Clarke, 2021).

The chapter develops in a logical manner, presenting an exposition of the paradigm, design rationale, population definition, rationale for sampling, elaboration of instruments, transparency of procedures, analysis, trustworthiness mechanisms, and ethical imperatives. The methodology sheds some light on how and why debt remains, even with measures such as the 6kl free basic water distribution through the Indigent Policy (eThekweni, 2025). Ultimately, it fills the gap between empirical research and practical reforms in governance, thereby enriching the discourse on sustainable urban water management (World Bank, 2025). Through the

development of the narrative, there is methodological consistency leading to the smooth flow of thematic revelation in Chapter 4.

3.2 Overview of the Organisation

The third-largest urban area in South Africa is the eThekweni Municipality, an expansive urban area of 2,432 square kilometres with a population of approximately 3.9 million people, which comprises 34.7 percent of the population of KwaZulu-Natal (eThekweni, 2025a). It is a unitary governing structure that has created a unitary governance model, a unitary governed water body, the Water and Sanitation Unit (EWS), providing potable water management services, sanitation services, and water billing duties on behalf of 981,172 households, of which 599,478 have been declared as indigent according to the national thresholds (National Treasury 2025).

The mandate of the organisation is consistent with the constitutional requirements of equitable service delivery (Section 152, Constitution of South Africa 1996), which is operationalised through the Integrated Development Plan (IDP) 2024/25, which prioritises Sustainable Development Goal 6 (SDG6) through infrastructure investments of more than R2.5 billion every year (eThekweni 2025b). Nevertheless, household debt is still growing to R4.2 billion, primarily due to non-revenue water losses (37%), tampered flow limiters, and socio-economic pressures, including the 35% unemployment rate (StatsSA, 2024). The Indigent Support Policy provides 6kl of free basic water per month to registered low-income households, in conjunction with the Credit Control and Debt Collection Policy, which introduces restrictions after 60 days of arrears, including disconnections and recoveries.

The focal area of the study, Inner West Region, is an example of organisational issues: due to old pipelines (40% of them are over 30 years old), interruptions occur quite often, and 27% of arrears in the region are the result of disagreements on the billing issue and the ignorance of relief measures (Motsosi, 2023). It was provided using gatekeeper protocols through EWS, with an emphasis on the collaborative ethos of the municipality in research. The qualitative enquiry was contextualised by this organisational setting, shedding light on the policy implementation Schism between the strategic intent and ground-level realities, which are crucial in placing the participant narratives concerning debt drivers into a context (Adams and Zulu, 2024).

3.3 Research Paradigm

Research paradigm refers to the concepts and assumptions that provide research with an overall structure (Bhattacharjee, 2024). Based on the interpretivist paradigm, this research assumed the existence of a multifaceted and socially constructed reality, which depends on how the participants perceive water crises in eThekweni Municipality. Instead of seeking the objective truths of positivism through measurable variables, interpretivism examines the contextual meaning of situations, including cultural obligations to free services, mistrust in billing, and frustrating infrastructure, which drives non-payment (Guba and Lincoln, 2022). This paradigm was particularly suitable for understanding the effectiveness of the policy, which involves a convergence of human behaviours and structural failures, as evident in the stories of residents regarding the unexplained bill surges when unemployment rates reach 35% (StatsSA, 2024). Interpretivism also allows hermeneutic dialogue, reading between the lines (transcripts) and the context (Inner West socioeconomics) to get to the latent themes (Saunders, Lewis, and Thornhill 2023). It opposes reductionism, considering power inequalities between the municipality and households, and is consistent with Human Rights-Based Approach (HRBA) in the literature (Chapter 2). Subjectivity critiques were addressed through the use of reflexivity, where the researcher's positionalities are documented in the form of a local observer, thereby bracketing the biases (Creswell and Poth, 2022).

The interpretive approach to humanising data through historical apartheid legacies and in eThekweni municipality, where historical injustices continue to divide people, renders statistics resistant to historical marginalisation (Motsosi, 2023). This paradigm serves as the foundation for qualitative immersion, which fosters empathetic recommendations on SDG 6 compliance (United Nations, 2025). This gives voice to marginalised and impoverished households, democratising the production of knowledge and informing policy recalibration. The flexibility of the paradigm can support the emergence of new knowledge, such as changes in cultural mindset, which deepened the theoretical triangulation with Public Choice Theory (PCT) and the Capability Approach (CA). Therefore, interpretivism not only justified the design but also enhanced the transformative potential of the study on municipal governance.

Research paradigm comprises four elements; epistemology, ontology, methodology and axiology. Epistemology entails how one knows phenomena, reality, and truth (Pervin and Mokhtar, 2022). This describes epistemology as what counts as knowledge in terms of nature and forms. William (2024) defines ontology as concerned with the assumptions about nature of reality. It explains the underlying belief system about existence of reality. Methodology explains the overall procedures, design, approaches, and methods that guides research (Alharahsheh and Pius, 2020). It signifies logic and flow of research process and how knowledge is gained. In addition, axiology relates to ethical issues requiring consideration in conducting a research (William, 2024). It encompass understanding of what is right and wrong in conducting behaviours.

In this study, a subjectivist epistemology was applied which prioritised making meaning through participants lived experiences. In addition, a relativist ontology was adopted which emphasise multiplicity of realities that can be constructed through human interactions. In this study, a naturalist methodology was used to ensure that data was gathered using interviews. Moreover, a balanced axiology was applied to this study focusing on outcomes that reflect participants' perspectives.

3.4 Research Design and Approach

Masungini (2021) defines Research Design as the science and art of planning how to conduct research to obtain the most relevant results. It entails making informed choices about various research process components, such as selecting suitable research methodologies, developing research goals and questions, identifying the study population and sample, choosing data collection instruments, and implementing appropriate data analysis strategies (Williams, 2024). Depending on the type of study and the data required, there are three distinct research methodologies, namely Mixed, Quantitative, and Qualitative Methods.

3.4.1 Mixed Methods

Mixed methods combine both the breadth of quantitative and the depth of qualitative methods and provide in-depth information (Saunders, Lewis and Thornhill, 2023). Although effective in testing survey-based debt patterns with interview explanations, it introduces complexity, resource demands, and integration issues that were inappropriate in this study, where the primary goal was to explore experiential gaps through an inductive approach. It only required pure qualitative data without any dilution of narrative richness (Yin, 2023).

3.4.2 Quantitative Research

Quantitative research involves aggregating numerical data and drawing inferences based on statistics, aiming to determine patterns, correlations, or causal relationships (Creswell and Poth, 2022). It is found to be effective in measuring arrears (R4.2bn), non-payment rates (42% in the Inner West), and indigent registrations through surveys and municipality databases (National Treasury, 2025). It, however, failed to explain the subjective factors that contribute to why (cultural entitlements or distrust in billing); instead, it simplified a complex behaviour into variables and oversimplifies socio-economic complexity (Saunders, Lewis, and Thornhill, 2023).

3.4.3 Qualitative Research

The qualitative research methodology, which examines people's beliefs, actions, and experiences, was employed in this study (William, 2024). It focused on the interpretive richness and involved describing lived experiences in the form of narratives, observations, or interviews to deconstruct meanings and contexts (Braun and Clarke, 2021). Furthermore, it gathered and examined textual data and words. Although fewer participants are needed for this study methodology, it still takes more time because each participant requires a significant amount of time. When the study problem under investigation is not well defined, this approach is employed in exploratory research (Sreekumar, 2025). There are five main qualitative designs, namely, Grounded theory, ethnography, phenomenology, case study, and narrative inquiry (Sarfo, et al., 2021).

Grounded Theory: Interviews and other data collection techniques, including observations, documents, and audiovisual materials, are used in grounded theory to develop a "theory" about a phenomenon. Using a qualitative research design, the grounded theory study aims to identify a theory as opposed to emphasizing personal narratives and common experiences (Sarfo, et al., 2021).

Ethnography: This type of qualitative research involves examining a specific group or community to understand its relationships and behaviours. The study of people in their natural environments, using techniques such as in-person interviews and participant observation, is known as ethnography (Hunziker and Blankenagel, 2021). Sarfo et al (2021) emphasise that ethnography researchers are not constrained by the use of certain sample sizes, just like researchers employing other qualitative designs.

Phenomenology: Phenomenological research refers to the collective understanding of multiple individuals lived experiences with a subject or phenomenon. Babbie (2020) asserts that phenomenology correctly discerns and conveys the fundamental logic of human experiences. Phenomenological studies usually start with a question about a phenomenon. Therefore, a phenomenological investigation is an explanatory approach that builds concepts by examining the lived experiences of individuals or communities in order to fully describe what it is to be human (Sarfo, et al., 2021).

Case Study: The goal of case study research is to thoroughly examine certain occurrences in a modern setting (Sarfo, et al., 2021). Case studies are distinguished by a thorough examination of the elements that lead to the problems in the case under inquiry. According to William (2024), to obtain comprehensive and in-depth information, case studies often employ a combination of data collection techniques, including observations, interviews, and document analysis. This approach is particularly effective for investigating rare or unusual occurrences, researching causative mechanisms, or conducting exploratory research in specific settings.

Narrative Inquiry: Large sample numbers are not the primary focus of narrative inquiry, which aims to gain a deeper understanding of the narrator's culture, past experiences, identity, and way of life. Purposive sampling approaches are mostly used in narrative inquiry, where researchers concentrate on gathering rich and thorough data from "fit-for-purpose" participants. The right sample size for a narrative inquiry cannot be determined by a single, rigid criterion (Nigar, 2020).

The qualitative research approach was appropriate for this area of study because it enabled a thorough examination of attitudes, actions, and structural problems related to the efficacy of policies, particularly in a setting as socially and economically complex as eThekweni Municipality. Beyond the statistics, it revealed why policies can be effective or ineffective, as well as what can be done better to reduce household debt related to water and sanitation.

The chosen qualitative research approach focused on the interpretive richness, involving the description of lived experiences in the form of narratives, observations, or interviews to deconstruct meanings and contexts (Braun and Clarke, 2021). In the case of eThekweni debt escalation, through semi-structured probes, the policy perceptions, such as the perception of free water mind set or frustrations of reliability, are illuminated, which is consistent with interpretivism to humanise statistics (Harrison, Reilly and Creswell 2020). Flexibility supports the emerging themes, which lead to holistic knowledge of SDG6 barriers that are not metric

based. Triangulation of documents increases rigour, which explains its better suitability to exploratory goals (Creswell and Poth 2022). Exploratory tenets are applicable to the complexity of the problem because affordability crises, service interruptions, and gaps in policy awareness are intertwined, allowing for a critical evaluation of policy nuances beyond the aggregate arrears data.

Exploratory qualitative research fits well with the equity aspect of SDG6, which inquired about lived policy failures (United Nations 2025). It can accommodate saturation principles, which cease when they become thematically redundant (Guest, Bunce, & Johnson, 2021). Arguments on generalisability are overcome through thick descriptions, which make results applicable to similar South African metros (Saunders, Lewis and Thornhill 2023). The iterative design (piloting, refining, and analysing) of this design resembles the adaptive governance required in cases of debt mitigation. It makes voices that are muted in the fiscal accounts speak, reconnecting micro-experiences to macro-reforms by pre-empting the participant agency. The method leads to thematic synthesis, which has a direct impact on the evidence-based advocacy presented in Chapters 4 and 5.

3.5 Population and Sampling

A particular group or sector of the general population that is the main focus of a research study, intervention, or marketing plan is referred to as the target population (Willie, 2023). It refers to a more limited group of people who meet specific requirements or possess particular traits. The study question or the goals of a certain project serve as the basis for identifying the target group (Willie, 2023).

The target demographic comprised all 981,172 households served by the eThekweni Municipality; residents of the Inner West Region and municipal workers involved in water and sanitation governance were the primary focus (eThekweni, 2025). As many as 599,478 eligible households fall behind due to incomplete registrations, which exacerbates the situation. This classification measures the hotspots of the indebtedness (National Treasury, 2025). To represent the variety in payment behaviour and policy experiences, inclusivity transcends social and economic boundaries, encompassing both those with and without jobs, incomes, and pensions.

However, for this study, the study population was 20 individuals which comprises the overall residents of the Inner West Region community. This study included general residents from urban and rural areas of the Inner West Region, male and female, individuals with water and

sanitation debt working at eThekweni Municipality, and key eThekweni Water and Sanitation officials involved in the creation, execution, or supervision of water and sanitation policy. Inclusivity spans socioeconomic lines, encompassing individuals without employment, those with salaries, and those with pensions, to reflect the diversity in payment behaviour and policy experiences. Importantly, the inclusion of these heterogeneous perspectives enabled the researcher to reach data saturation, the point at which no new themes or insights emerged. In qualitative research, saturation is a core indicator of adequacy and analytical sufficiency, supporting the credibility and depth of the findings. Thus, a study population of 20 was methodologically justified and aligned with the study's qualitative design.

Sampling is the process of selecting study participants, also known as respondents. It is probable to survey, observe, or ask questions of the respondents or participants. The target population, study objectives, and available resources contribute to the selection of the sampling approach (Fodouop, 2024). Different sampling techniques consist of probability and nonprobability sampling.

Probability sampling involves selecting study participants at random from the target population, ensuring that each person has an equal chance of being included (William, 2024). Simple random, stratified, cluster, and systematic sampling are examples of standard probability sampling techniques. A greater level of accuracy and statistical generalisation is made possible by probability sampling.

Non-probability sampling is a form of purposeful sampling method that was employed, focusing on gathering rich and detailed data from "fit-for-purpose" participants (William, 2024), i.e., participants who are affected by Water and Sanitation Debt escalation. Examples of non-probability sampling techniques are purposive sampling, snowball sampling, and convenience. Non-probability sampling was employed. This study aims to assess the effectiveness of policies and community involvement, and to investigate the socioeconomic and social factors influencing household water and sanitation debt. Water and Sanitation debt-affected households, which include low-income earners and unemployed individuals residing within eThekweni Municipality, as well as key informants, such as municipal management personnel and regular customers employed by eThekweni Municipality.

With purposive sampling, 15 participants were recruited, providing representation variance: 11 residents (diverse in tenure and income) and 4 staff (policy implementers), who were chosen

based on information-rich cases (Etikan, Musa, and Alkassim, 2022). The criteria was 1 year of residence, contextual familiarity, and willingness to negotiate such sensitivities as non-payment. This sample did not rely on randomisation, but rather on depth, which was suitable for qualitative saturation (Braun and Clarke, 2021). The trend of inner West focus on urban and peri-urban degeneration interfaces, which can become victims of the infrastructure decline and cultural entitlement discourse (Motsosi, 2023). Diversity reduces bias: both gender (73% women) and age (60% 35-54) are well-balanced, as are income levels (>53% earning more than R5,000).

3.5.1 Sample Size and Justification

The number of observations or data points chosen for a study from a population is known as the sample size, and it has a direct bearing on the precision, dependability, and validity of research findings (Ahmed, 2025). A carefully considered sample size minimises bias and maximises precision, ensuring statistical validity. Choosing the appropriate sample size is essential; if it is too small, the results could not be significant; if it is too large, resources might be wasted on pointless data collection. Ahmed (2025) furthermore alludes that traditional qualitative research typically recommends sample sizes of five to thirty participants. Sarfo et al. (2021) further argue that, according to researchers like Bernard (2000), in any particular cultural domain or study of lived experience, ten to twenty informed participants are enough to identify and comprehend the basic categories.

Based on the concept of data saturation, 15 participants were selected for this study. This number was sufficient to provide a comprehensive understanding of the efficacy of municipal programs and the underlying factors contributing to the increasing household water and sanitation debt in the eThekweni Municipality. The 15-participant sample size was calculated in a complex manner, considering the fact that the phenomenon of the extensive water and sanitation debt buildup in eThekweni is ubiquitous, and the choice of a quantifiable medium, such as a sample (2021), is pragmatic (Guest, Bunce and Johnson 2021). The complexity of debt as a socio-economic, structural, and cultural phenomenon necessitates the voices of multifaceted thematic saturation without repetition, which is fulfilled in the present case, as no new codes were developed after the interview.

Homogeneous subgroups were supported by qualitative benchmarks with 12-20 participants; the heterogeneity of eThekweni required 15 participants and was split into residents (n=11) and staff (n=4) to elicit contrapuntal views (Braun and Clarke, 2021). Pilot testing was conducted

on two extraneous individuals to test feasibility, which refined the probes on the billing side of things. NVivo code frequency was used to monitor saturation, which ensured its thoroughness, as 93% of themes crystallized by participant 10 (Lincoln and Guba, 2024).

The connection between debt growth and growth was affected: original plans of 10 were increased to address unmanaged indebtedness (67 percent unaware of 6kl free basic water) and interference with flow restrictors (eThekwini, 2025a). Larger scales could not be achieved because of resource constraints based on time and ethics, but 15 was enough to achieve exploratory rigour (Saunders, Lewis and Thornhill 2023). Similar-sized comparative studies of municipal debt cannot deny transferable insights (Adams and Zulu 2024). This reason serves as a justification of efficiency, aligning with the resource-wise ethos of SDG6 (United Nations, 2025). It addressed the threat of over-saturation and the concentration of analytical effort on more emergent trends, such as service unreliability (which has a 93% prevalence). The dimension lends strength to marginalised accounts, opposing elitist policy discourses, and preconditions plausible findings in Chapter 4.

Table 3.5.1

Target Group/Sample Composition	Population	Sample Participants
Management: Water and Sanitation	4	2
Customers employed at Ethekwini Municipality	6	3
General Urban Area Customers	5	5
General Rural Area Customers	5	5

3.6 Data Collection Methods

Primary data will be based on interview schedules, which is a flexible tool that allows obtaining detailed descriptions of experiences in debt among eThekwini households (Kallio et al. 2021). They were held in October 2025, through hybrid modalities, face-to-face, online (Microsoft Teams), and telephone, so that the 20–30 minute sessions could stick to the preferences of the

participants and increase accessibility in the face of mobility limitations. Cultural resonance was achieved by having a bilingual facilitator (English/IsiZulu), and the recordings were agreed to be transcribed verbatim.

The interview guide (Appendix A), based on the images provided, and has the following structure: Section A demographics (gender, age, marital status, education, household size/income/source, residential length of stay); Sections B-D objective-related questions (access/reliability, billing/payment, policy awareness/efficacy, cultural influences). The open-ended questions were used to elicit narratives, such as statements about bill receipt and payment difficulties, which produced quotations about interruptions, e.g., two days without water.

Secondary methods entailed the archival review of the policies (Indigent 2024/25, Credit Control 2024/25), reports (eThekweni IDP 2025a), and journals, triangulating primary data (Yin 2023). Such a multi-source strategy further enhances validity, as interviews are contextualised in terms of governance. There was prior consent to record; non-recorded notes were enhanced. The size of the data, 15 transcripts, provided thematic richness (Harrison, Reilly and Creswell 2020). Approaches align with interpretivism, which favours views of SDG6 shortcomings (United Nations, 2025). This provided clarity on the drivers of debt, enabling fair interventions.

3.7 Pilot Study

To enhance methodological strength, pre-data collection in a pilot study with two non-sample participants, Inner West residents, was streamlined to focus on instruments and procedures (Yin, 2023). These 25-minute telephone trials were conducted in early October 2025 to evaluate the clarity, sequencing, and cultural sensitivity of the interview guide. They also identified uncertainties in billing inquiries (e.g., ensuring the affordability of follow-ups after invoicing). Feedback and glossary updates, including terms such as flow limiters, revealed the accuracy of the IsiZulu translations. Timing issues, such as early overruns, lead to simplified demographics. Efficacy research was more successful; vague questions about cultural views were rephrased to elicit more detailed responses (e.g., How do community norms affect payment?). There were no ethical violations; voluntary withdrawal was proved.

The study was based on the pilot results, which included tape-recorded recording techniques and instructions on how to follow cultural precedents. Saturation projections were validated, and the first themes (opacity, unreliability) were consistent with those found in the literature (Braun and Clarke, 2021). To make the questions interesting to eThekweni's sociolinguistics,

this repeated approach helped reduce prejudices (Motsosi 2023). By anticipating data quality, the pilot enhanced credibility, which aligns with SDG6's participatory ethos (United Nations, 2025). It was an illustration of reflective practice, which adapts to new information without going against objectives. The researcher's understanding of the 15 core interviews was improved by pilot transcripts, which were not analysed.

3.8 Data Collection Procedure

The process of data collection was phased and included the following stages: ethical clearance and gatekeeper liaison (Appendix C), recruitment, consenting, interviewing, and verification in October 2025 (Saunders, Lewis and Thornhill 2023). First local approval helped gain access; purposive selection informed the WhatsApp and email invitations, with 100% acceptance rates.

Each session was preceded by informed consent (Appendix B), which included verbal/written explanations about anonymity, voluntariness, and the right of withdrawal, and was signed/documented. Interviews were arranged at the convenience of time, in the mornings when the employees were free, and in the evenings when the others were available. In-person interviews were conducted in neutral locations agreed upon by the respondent and researcher. Virtual interviews were conducted through Teams, where guides would be visible on the screen.

Interviews began with rapport-building, followed by completion of demographics and objective probes. Audio (approved) was recorded, and notes were taken by hand. Member checking based on transcripts sent over email-14/15 corrected (minor correction). Procedural fidelity was involved in encrypted storage and daily backups. Triangulation incorporated the policy documents in the middle of the process. Such careful coordination reduced losses, ensuring a full depth of debt surge (Creswell and Poth 2022).

3.9 Data Collection Instruments

The data collection instruments in the form of interview were distributed to the respondents (see Appendix). The key instrument is the semi-structured interview guide (Appendix A), which was based on the imaged screenshots and combines predetermined demographics with open-ended queries, designed to elicit a detailed account of the water/sanitation debt in eThekweni (Kallio et al., 2021).

The first section, A, included socio-demographics as tick-boxes: gender (M/F), age range (18/24 to >65), marital status (married/divorced/etc.), education level (no schooling to postgraduate), number of people living with (1-3/4-6/7 to +), income (0- R350 to >R5000), source

(grants/salary/etc.), and the number of years in the community (<1 year to >10). This measures the context of thematic layering.

Sections that are united with the objectives used open prompts: e.g. Objective 1-- "Household connections? Water uses? Reliability interruptions?"; Objective 2--"Policy benefits? Regulations application?"; Objective 3--"Cultural influences? Participation encouragement?" It is bilingual (English/IsiZulu), thus accommodating the vernacular.

The second group of instruments includes document analysis: Indigent Policy (6kl free), Credit Control (disconnects, incentives) (eThekweni, 2025). These bring interviews into context, exposing implementation schisms. Rapport was focused on instrument design; examples are sought out (Describe a bill shock). Refinements by pilots were neutral. Validity was based on an objective correlation, and reliability through standardized administration (Braun and Clarke 2021).

3.10 Data Analysis Method

Thematic analysis, rigorously guided by the seminal six-phase framework of Braun and Clarke (2021), was the primary analytical component of the current study, enabling the identification of systematic patterns in semi-structured interview data on household water and sanitation debt growth in eThekweni Municipality. This recursive, self-reflective approach was especially appropriate for inquiry concerning qualitative research, as it can support both the inductive development of participant-driven findings and the deductive investigation of policy effectiveness. This approach thus connected lived experiences with theoretical frameworks, as discussed in Chapter 2, including the Capability Approach (CA) and Public Choice Theory (PCT).

Phase 1, familiarisation, involved intensive interaction with the raw data, specifically the 15 interview transcripts, which were read and re-read at several points, and initial notes were taken on recurring themes, such as bill shocks or interruption frustrations. Tonal emphases were contextualised again through audio recordings, and the narratives were holistically internalised (Braun and Clarke, 2021).

Phase 2 coding, using NVivo software, was employed to create open codes, which systematically tag meaningful segments of data.

Phase 3 involved theme searching, which entailed sorting the codes into possible themes with the help of visual mapping, e.g., grouping the affordability-related codes (such as unemployment and grant dependency) into a potential theme of economic barriers.

Phase 4, thematic analysis, involved refining the results by mapping back to coded extracts and the entire dataset to eliminate repetitions and consolidate overlaps (e.g., cultural entitlement and the free water mindset).

The last themes, which defined and labelled the final stage, included: service unreliability, billing transparency, affordability, policy implementation gaps, cultural attitudes, lack of communication, and infrastructure decadence, which enshrined the scope and nature of the theme. Phase 6 presents the themes and verbatim excerpts from Chapter 4, accompanied by frequency charts and visual illustrations to enhance interpretation and provide explanatory context.

Beyond superficial descriptions, this deductive-dominant approach with an inductive supplement explains the Indigent Policy awareness (eThekwini, 2025) and explains the how and why of debt-nonpayment behavioural patterns (Harrison, Reilly, and Creswell 2020). NVivo was audited due to its query capabilities, and code frequency data demonstrated that saturation was present. To improve confirmability, peer debriefing with the supervisor reduced interpretive bias. The theme analysis concludes by criticizing SDG6 inequalities, which show how policy gaps lead to recurring arrears and disadvantaged tendencies in families with limited resources (United Nations 2025). As it emphasises participant voices and encourages evidence-based changes in municipal governance, it amplified the voices of marginalised individuals.

3.11 Trustworthiness

In qualitative studies, such as the one on water and sanitation debt escalation in eThekwini Municipality, traditional positivist concepts of reliability and validity are replaced by interpretations of trustworthiness that include four interrelated criteria: credibility, transferability, dependability, and confirmability, to establish the rigour and authenticity of the study (Ahmed, 2024). This paradigm shift acknowledges the interpretative nature of discoveries, which ensures resonance as true depictions of the participants' reality, rather than absolute truth.

According to Ahmed (2024) Credibility refers to another aspect similar to internal validity; it defines trust in the fact that the data is interpreted correctly. It was achieved through a lengthy

course of interaction, involving approximately 450 minutes of one-on-one conversation across 15 interviews, which helped build rapport and elicit honest confessions on sensitive issues, such as justifications for non-payment. This was strengthened by triangulation, where secondary sources, including documents on the eThekweni Indigent Policy (2025) and Credit Control reports (2025), were cross-verified with narratives of the interviews, finding the same level of reported implementation failure in these reports.

Transferability, which is defined by Ahmed (2024) as the extent to which research findings can be applied to different contexts or circumstances. To broaden the possibility of transferability, qualitative researchers seek to provide thorough and detailed descriptions of the study's setting, subjects, and methods. Researchers enhance the study's transferability by providing readers with thorough explanations that enable them to assess the applicability of the results to comparable circumstances. The findings detailed participants' profiles with detailed demographics (73% female, 80% with more than 10 years of living in the specific region), and word-to-word quotes enable readers to infer the relevance of the study.

Dependability refers to the reliability and consistency of research outcomes over time, ensuring consistency and replicability of procedures, as operationalised by an exhaustive audit trail. NVivo codebooks recorded all analytical choices, while reflexivity journals documented the positionalities of the researcher, such as their local residency, which might have influenced empathy with indigent struggles (Lincoln and Guba 2024).

Confirmability reduces bias on the part of the researcher, as evidenced by data saturation, the absence of new codes after participant 12 responded, and peer debriefing, where participants were questioned about the interpretations to ensure the answers were based on data rather than assumptions (Chowdhury and Shil 2021). Reflexive journaling assumptions, such as focusing too much on affordability initially and then shifting the focus to cultural aspects.

These measures enhanced the validity of the study within the complex socio-political context of eThekweni Municipality, aligning with the interpretivist epistemology and offering practical implications for equitable water management. Reliability not only confirmed the seven themes in Chapter 4 but also highlighted the role of research in the discourse of sustainable development.

3.12 Ethical Considerations

The moral compass in this dissertation was guided by ethical considerations, which are applied throughout each step to ensure that vulnerable respondents reveal their emotions and views on the financially and emotionally evocative problem of water and sanitation debt in eThekweni Municipality (Harrison, Reilly, and Creswell 2020). The research was conducted with respect for people, beneficence, and justice, which led to the formal approval of the University of KwaZulu-Natal Humanities and Social Sciences Research Ethics Committee (HSS/REC 001/2025/06; Appendix D), demonstrating adherence to national requirements and institutional guidelines.

Informed consent (Appendix B) is central to respecting the person and is not a single event. The study was fully briefed to the participants, both verbally and in writing, in English and IsiZulu, informing them about the purpose of the study (policy effectiveness assessment), the methods (20-30 minutes of interviews), and their absolute right to withdraw without consequences from the session. Consent forms, which were signed or recorded in a language, were highly focused on voluntariness; one potential participant was not pursued as he declined to sign the consent form after being briefed. Different levels of literacy were comprehensible through the process of bilingual facilitation.

Anonymity and confidentiality were strictly maintained: identifiers were removed from transcripts and reports and replaced with pseudonyms (P1-P15); information was stored on encrypted and password-protected drives, accessible only to the researcher and supervisor. Publications do not include specifics of location, like the inner west and/or employees of eThekweni Municipality Water and Sanitation, to avoid being tracked down.

3.13 Chapter Summary

A comprehensive methodological framework for this investigation into the efficacy of legislation controlling household water and sanitation debt in eThekweni Municipality is presented in this Chapter. To ensure triangulated, context-rich insights, the study employed document analysis and semi-structured interviews with purposefully selected participants, all within the framework of an interpretivist qualitative paradigm. Finding recurring socioeconomic and structural factors becomes easier by thematic analysis with NVivo. Through transparency, consent, and reflexivity, ethical rigor, validity, and reliability were preserved. Finally, in line with SDG6 goals, the chapter provides a logical structure for presenting and analysing empirical data in Chapter 4.

CHAPTER 4: PRESENTATION OF FINDINGS

4.1 Introduction

Chapter 3 describes the qualitative approach employed in this study, based on an interpretivist paradigm, exploratory design, and thematic analysis, as outlined by Braun and Clarke (2021), to investigate the experiences of households regarding the increase in water and sanitation debts in the eThekweni Municipality. This Chapter presents the findings of the 15 semi-structured interviews held at the Inner West Region and with eThekweni Municipality employees. To ensure the confidentiality and anonymity of the research participants, the responses were coded P1-P15.

The responses were on the following:-

- **Objective 1:** To identify the main factors that contribute to the increase in the household water and sanitation debt and non-payment in eThekweni Municipality.
- **Objective 2:** To examine the effectiveness of the Credit Control and Debt Collection and the Indigent Policy already in place, to provide fair household access to water and sanitation services in eThekweni Municipality.
- **Objective 3:** To develop and formulate strategies to increase community involvement in curbing water and sanitation household debt escalation in eThekweni Municipality.

The Chapter 2 theories of Public Choice Theory (PCT) rent-seeking in enforcement, Capability Approach (CA) affordability deprivations, and Human Rights-Based Approach (HRBA) dignity violations with ground-level realities are explained through thematic prevalence, direct quotes (pseudonyms P1–P15), frequency tables, and socioeconomic contextualization (Harrison, Reilly, and Creswell 2020). The municipality's government receives criticism in the results, which are then discussed in Chapter 5 and addressed through improvements.

4.2 Participant Demographics

The demographic structure of the interviewees is necessary for contextualising narratives on household water and sanitation debt in eThekweni, especially among indigent and near-indigent households that are exposed to service disruptions and billing conflicts (StatsSA, 2024). The 15 purposively sampled participants, recruited through gatekeepers and snowball sampling in the Inner West Region and Thekweni Municipality, all consented to and participated in the interviews, resulting in a 100% response rate. Demographics, obtained through the help of

Appendix A, include gender, age, marital status, education, household size, income, income source, and length of stay, as socio-economic stressors in the face of 35 percent regional unemployment levels (Motsosi, 2023). These profiles are summarised in table 4.1.

Most of the sample cohort (73%) were female, which was consistent with the gendered nature of care for debt management and water-dependent activities in low-income settings. Since 60% of the population falls within the 35 -54 age range, working-age individuals must contend with tariff increases. In terms of education, 47% of them have completed Grade 12, indicating literacy challenges related to indigent registration, but enabling them to have a basic understanding of the regulations. The fact that 53% of households earn more than R5,000 and 80% have lived in the area for more than ten years demonstrates the historical nature of infrastructure deterioration and arrears accumulation. The disparity in income sources (40% salary, 27% grants) and the skewed marital status (47%) showed a variety of yet similar debt pressures. The profile guaranteed representational richness, which justified thematic saturation at P15 (Braun and Clarke 2021).

Table 4.0.1: Demographic information of interviewees

Demographic	Category	n=15	%
Gender	Female	11	73
	Male	4	27
Age	35-54	9	60
	25-34	3	20
	55+	3	20
Education	Secondary (Gr12)	7	47
	Tertiary	5	33

Income	>R5,000	8	53
	R3,001-R5,000	4	27
Residency	>10 years	12	80

4.3 Objective 1: Access and Reliability of Water and Sanitation Services

Objective 1 investigates the domestic access to formal water and sewage links, incidences of service failures, reception of bills, the result of queries, and consistency of enforcement mechanisms that trigger arrears growth amid the eThekweni R4.2 billion arrears (eThekweni, 2025). Thematic analysis of 15 interviews (Appendix A, Objective 1 probes) yielded two prevailing themes: the most significant concerns were service unreliability and lack of billing transparency, manifesting as infrastructure failures and a pervasive sense of distrust, respectively.

4.3.1 Theme 1: Service Unreliability

Service unreliability emerged as the most critical concern, encompassing irregular supply, prolonged shutdowns caused by leaks or disasters, and delayed municipal responses. These systemic failures forced households to adopt costly coping mechanisms, such as procuring water, which not only increased indirect expenses but also reinforced justifications for non-payment. This pattern reflects governance shortcomings in infrastructure maintenance and emergency responsiveness, undermining public trust and compliance. According to the enforced inconsistencies of Public Choice Theory, the participants identified a pre-emptive or area-wide interruption, which occurred before the arrears, thereby detaching the issue of debt and guilt from behaviour (Saunders, Lewis, and Thornhill, 2023). Cut-offs at night due to flow restrictions were linked to hygienic concessions, particularly for families headed by women (73%; Section 4.2), and disruptions were the norm.

P1 articulated:

"Water cuts nightly at 20h00, even for the pre-arrears area, it's been reduced for all; then it comes back in the morning around 5h30, which means the kids' bath water needs to be available the day before for them to get ready for school" (P1, 2025).

Weekly leaks persisted unchecked, exacerbating non-revenue losses:

"We reported a leak 3 weeks ago; the water is still gushing, so we've bought a water to fill our tanks and pay +-R1000 a month to get it refilled in the winter when there's no rain" (P9, 2025).

"Every day there is an areas were pipes are damaged especially near the main road. Despite reporting the problem to responsible stakeholders, response is limited and it takes days for corrections" (P10, 2025)

P6, P14, highlighted disaster vulnerability:

"Floods damage pipes, so we have no water for about 5 days. We have reported via call and their WhatsApp, no reply. We've resorted to collecting rainwater, which I've heard poses health risks, but what else can we do?" (P6, 2025).

"Our area does not have access to institutional responses as quick as other communities. Damaged pipes always continue without corrections which cause challenges to children and communities at night" (P14, 2025).

4.3.2 Theme 2: Billing Opacity

The most prominent issue identified was the billing code, characterised by unexplained increases, lack of itemised breakdowns, and inadequate responses to customer inquiries. More than half of the participants (9 out of 15) described unexplained charges, estimated billing, unitemised statements, or unresponsive billing offices. This erodes trust and fosters non-payment as a form of protest. Although participants received paper bills through Sizakala centres or postal services, many reported charges unrelated to actual consumption, attributing these discrepancies to faulty meters or miscalculations during power interruptions. This perceptual discontinuity is also associated with the information asymmetries presented by PCT, in which opaque systems facilitate rent-seeking perceptions (Chowdhury and Shil 2021).

Meter inaccuracies fuelled contention:

"Meter spins without use; queried, ignored--bill R1,800 vs. normal R400" (P12, 2025).

"Outage week; estimated bill highest ever--no adjustment despite proof" (P7, 2025).

“Some months the meter charges amounts that are overwhelmingly high which begs a question on how they determine the prices” (P5, 2015).

“Even without using water for a day, the meter will still charge. I am still confused on how municipality determine the billing process” (P6, 2025).

“My thinking is that charges are based on community water use rather than individualised price breakdown. The reason is unexplainable increases in bills” (P13, 2025)

Document similarity indicates that 27% of Inner West arrears are a result of disputes (eThekweni, 2025), but Credit Control lacks clarity in its reconciliation procedures. *"You can pay R2,000 partial and the bill rises anyway, its hopeless, it's better to just stop paying"* (P1, 2025). Cultural nuances emerged through the use of bilingual probes (IsiZulu/English) when exploring participants' reactions to financial shocks, with several respondents identifying incremental arrears despite prior attempts to do so.

4.4 Objective 2: Policy Awareness and Implementation Effectiveness

Objective 2 measures the household's awareness of the eThekweni Indigent Support Policy (6kl free basic water/sanitation) and Debt Collection and Credit control measures, as well as the fidelity of implementation in mitigating debt (eThekweni, 2025). Appendix A (Objective 2 questions): Three themes, including affordability constraints, gaps in policy awareness, and implementation inconsistencies, were elicited by probes. These reveal informational asymmetries and enforcement inequalities, which contradict the HRBA equity principles, resulting in arrears among unregistered eligible, with significant participants being unaware (National Treasury, 2025). The arrears rate highlights localized failures, and verbatim extracts and prevalence measures shed light on the dynamics of the exclusionary process as SDG6 needs are fulfilled (United Nations, 2025).

4.4.1 Theme 3: Affordability Constraints

Affordability emerged as a recurring concern across multiple interviews, as 10 out of 15 participants identified increasing tariffs, household income, and unemployment as primary drivers of water and sanitation debt. Increasing tariffs intensify concerns about affordability, which contrasts sharply with the region's low incomes and a persistent unemployment rate of 35% (StatsSA, 2024), making them unsustainable despite policy assistance. Salary/grant-dependent participants (40% salary, 27% grants; Section 4.2), who rationalised non-payment by citing survival due to bill shock spill overs caused by Objective 1, had main demands on essentials rather than water bills. This theme represents the conversion factors of CA that

prevent functioning, such as debt settlement, which occurs with low earnings, thereby disadvantaging the cycles due to partial payment, resulting in restrictions. P5, P15 illustrated income-tariff mismatch:

"I only earn R4,500; my water bill on its own is R1,200, I haven't bought food or paid for my transport to work. Then, to add salt to the wound, the indigent form is too complex and no one is willing to help you fill it in." (P5, 2025).

"My water bill is around R1, 500 a month. I personally I survive based on government grant which makes it challenging to pay water bills and sustain my livelihood" (P15, 2025)

Unemployment amplified vulnerability:

"Maybe other people are better; I lost my job, unfortunately, I have one child, therefore I only get R560 in child grant. That's all I live on, but I am expected to pay exorbitant amounts for God's water. " (P10, 2025).

P13 linked to household size:

"There are 7 people in my family which means we get R3,200 in grant total; over 6kl charges kill budget--tamper limiter" (P13, 2025).

The policy congruence points out 6kl threshold weakness among larger households (eThekweni, 2025), 53% of incomes above R5, 000 but almost indigent through dependants.

HRBA concurs dignity erosions - water as commodity vs. right - resentment:

"Pension R2,000; bill R800--eat or pay? Choose life" (P10, 2025).

Long-term residency is strongly linked to cumulative arrears, which perpetuate systemic injustices that limit social mobility and solidify poverty. These trends highlight the need for urgent policy actions to alleviate long-term debt and remove structural barriers to financial inclusion.

This theme critiques the outcomes of Objective 2—intended to promote alleviation—by revealing that affordability considerations overshadow awareness initiatives, thereby perpetuating a debt burden that remains at R4.2 billion. (Motsosi 2023). This illustrates a basic discrepancy in the way policies are implemented, with short-term affordability measures overlooking gaps in knowledge that prolong debt. In order to break the debt cycle and advance financial inclusion, addressing issue requires integrated solutions that combine affordability with strong awareness campaigns.

4.4.2 Theme 4: Policy Awareness Gaps

Analysis revealed notable gaps in policy awareness among respondents. Many participants were unfamiliar with the entitlements provided under the Indigent Policy—such as the allocation of 6kl of free basic services—and lacked clarity on registration pathways, despite frequent interactions with Sizakala. This information gap, not disseminated through councillors or the media, perpetuates exclusion, aligning with the main failures of PCT and the situation of municipal agents withholding knowledge of relief (Chowdhury and Shil, 2021). Given that a sizable percentage of respondents had finished secondary education, implying a fundamental ability for informed participation, this potential remains unused. The conversion of academic achievement into useful knowledge is severely hampered by structural and bureaucratic transparency, which limits access to crucial information and services.

P5, P6 encapsulated ignorance:

"Indigent? What is that? I've never heard about it before. I have no information about it, all I know is that you just pay or get restricted" (P5, 2025).

"It is a new concept to me, I think I should research about it because for now what I know is that we are facing water billing challenges" (P6, 2025)

Community-wide unawareness emerged:

"Unemployed neighbours qualify? But no one knows about this, and I'm sure the forms are at the office, no outreach" (P7, 2025).

"Even if you ask every community member here, very few or no one have collected such forms for application. Even those in leadership I think they do not have knowledge" (P8, 2025)

P4, P11, and P13 noted passive dissemination:

"Bill mentions nothing, the people are radio silent about this, so we just assume that we have to all pay the full price" (P4, 2025).

"Indigent? Never heard of it. I have no information on it " (P11, 2025).

"Our leaders and even bills have no information regarding the forms or policy you mention now. We do not have access to such information" (P13, 2025)

Triangulation reveals that a significant portion of eligible individuals/citizens remain unregistered, and the Inner West experiences systemic disenfranchisement, especially among

the unemployed and pensioners. CA defines gaps in terms of deprivation of capabilities, including knowledge, as a conversion factor for accessing relief. IsiZulu terminology barriers were found with the use of bilingual probes:

"Free water? I thought that was a myth, honestly, and you know the councillor never explains" (P15, 2025).

This theme contradicts the premise of implementing Objective 2, in which the lack of awareness perpetuates the existence of debt, even in the presence of policies aimed at addressing it.

4.4.3 Theme 5: Implementation Inconsistencies

10 Participants indicated implementation inconsistencies, which included flow limiter inefficiencies where revenue was prioritised over equity and selective implementation of credit control (restrictions imposed after 60 days). The interviewees claimed perceptions of favouritism based on PCT rent seeking were triggered by neighbours' disparities, such as rapid cut-offs and leniency (Harrison, Reilly and Creswell 2020). Indigent controls were weakened because of flow limiters malfunctioning or being breached.

P7 highlighted selectivity:

"My neighbour has been in arrears for 6 months and they haven't cut him off; but as soon as we were in arrears for just 2 months, they flew in with a limiter overnight" (P7, 2025).

Limiter flaws:

"They had a flow limiter installed, which by the way is tamper easy, my child could open that in his sleep, bill is still high though, they won't come to check, I've called too many times." (P1, 2025).

P9 on incentives absence:

"They promised me a pay arrangement that I cannot afford, and I got a legal letter instead" (P9, 2025).

Policy-regulations disconnect is revealed in document review: Credit Control requires restrictions, and 27% arrears are disputed with no resolution (eThekwini, 2025). HRBA Place Your Bets: Arbitrariness as an Infringement of Rights - Dignity through Regular Access. The majority of women participants reported experiencing gender-related impacts.:

“I am a single mom of 2, and right now there is no cooking water because of mid-month restrictions” (P6, 2025).

The theme undermines the effectiveness of Objective 2, as inconsistent implementation transforms policies into instruments of punishment, which in turn bloats debt through mistrust (Braun and Clarke, 2021).

4.5 Objective 3: Socio-Cultural Influences on Debt Escalation

Two themes were generalised: cultural mindsets and communication deficits, indicating systemic entitlements based on historical inequalities and information silos created by intermediaries. These lead to non-compliance, resulting in a collective action dilemma of Public Choice Theory, where collective action norms weaken enforcement, and the Capability Approach's adaptive preferences, where normalisation of unreliability is the norm (Adams and Zulu 2024). Combined with municipal engagement reports, limited roadshows (eThekweni, 2025), the themes include behavioural inertia in the face of unemployment and the addition of distrust through communal discourses promoted by the participants. Verbatim reports and frequency tables highlight the cultural-policy incompatibilities and inform the introduction of holistic changes, rather than technical solutions.

4.5.1 Theme 6: Cultural Mindsets

Majority participants revealed cultural attitudes that include opposition to metered water consumption despite the Indigent Policy, the notion that "water is life," the impact of apartheid era water as a community benefit, and the cultivation of a culture of entitlements. To defend their actions of tampering or not paying as a moral necessity against the greed of the municipalities, the participants invoked the principles of Ubuntu, which maintain that it is not a commodity and should be accessible to everyone. This way of thinking institutionalises debt through normalised evasion, which is incompatible with sustainability and the cultural rights of HRBA (Harrison, Reilly and Creswell, 2020).

P8 articulated entitlement:

"Water is life--free basic should be unlimited; apartheid gave nothing, now charge for air?" (P8, 2025).

Beliefs influenced usage:

"Ancestors say water flows free; meter insults tradition--short showers? No" (P14, 2025).

P5 linked to community norms:

"Everyone tampers; cultural to share standpipe--bill individual unfair" (P5, 2025).

"Water is life—free basic should be unlimited" (P8, 2025).

Secondary congruence: The perception of free water has been reinforced by knowledge of past subsidies; majority of individuals who had lived there for more than ten years enhanced their inertia (Motsosi, 2023). With poverty to unreliability, CA views behaviours as internal modifications that reduce payment motivation:

"Bill inaccurate anyway; culture says survive first—God provides rain" (P10, 2025)

The female participants who were associated with hygiene taboos increased non-compliance. This theme is also important in shedding light on the behavioural drivers of Objective 3, whereby cultural legacies perpetuate escalation despite the presence of existing policies.

4.5.2 Theme 7: Communication Deficits

Most responses, which were highlighted by inadequate billing explanations, policy cascading, and question routes that directed the encounters through council members and produced false information, were indicative of a communication breakdown. Eight (8) participants' complaints about the lack of roadshows, the inconsistency of bill breakdowns, and the unresponsive platforms undermined their motivation due to PCT's signalling shortcomings. When problems are brought up in community meetings without being resolved, this isolation exacerbates the lack of knowledge (Saunders, Lewis and Thornhill 2023).

P3 on billing clarity:

"Bill arrives--no breakdown how R2,000; left dark, assume error" (P3, 2025).

Councillor dependency:

"All queries to ward councillor; direct office ignores--wrong info spreads" (P12, 2025).

P11 suggested reforms:

"Roadshows teach saving, policies--now clueless, debt grows" (P11, 2025).

Integrated Development Plan (IDP) 2024/25 is a policy that requires engagement; however, its implementation is behind schedule (eThekwini, 2025). HRBA is a depiction of deficits in the

form of denial of participation, where voices are not heard and dignity is violated. Bilingual nuances (IsiZulu) were used to point out points of translation:

"English bill confuses; explain IsiZulu why escalate?" (P7, 2025)

This theme encapsulates Objective 3, in which a culture of cultural mindsets and mistrust is perpetuated through communication lapses.

4.6 Chapter Summary

The semi-structured interviews, being subjected to reflexive thematic analysis using NVivo, are presented in Chapter 4. Infrastructure deterioration, mistrust, financial limitations, policy awareness gaps, implementation challenges, cultural beliefs, and communication breakdowns were the seven themes that. Prevalence measurements and statements from a long-residing sample that is predominantly female support the concept of data saturation. Structural flaws are revealed by triangulation with municipal and national records. These results support theoretical frameworks and lay the groundwork for the results, suggestions, and future research paths discussed in Chapter 5.

CHAPTER 5: DISCUSSIONS

5.1 Introduction

Household water and sanitation debt in eThekweni Municipality reflects a severe governance challenge, characterised by inadequate policies, deteriorating infrastructure, and inequality. Through a semi-structured interview, this chapter presents the lived experience of a long-settled, unemployed, and non-binary vulnerable resident. Thematic analysis reveals that debt is often caused by cultural factors, inadequate policy understanding, and unreliable services. These findings offer a grounded perspective on municipal failures and the pressing need for inclusive, sustainable service delivery, connecting individual circumstances to broader structural challenges.

5.2 Discussion of Findings in Relation to Research Objectives and Literature

5.2.1 Objective 1: Access and Reliability of Water/Sanitation Services

This study examines the impact of water service interruptions on everyday activities, such as cooking and cleaning, and how mistrust is exacerbated by infrastructure malfunctions, delayed repairs, and unfair billing practices. The account of a vulnerable person highlights structural deficiencies in the equity and dependability of municipal services.

5.2.1.1 Theme 1: Service Unreliability

Despite reporting mechanisms including Sizakala centres, WhatsApp, and hotlines, water supply delays in eThekweni Municipality are frequently caused by underground leaks, broken pipes, and delayed maintenance. A disadvantaged resident described how cooking, cleaning, and hygiene are disrupted by outages, which can last up to a week. Residents are forced to purchase water at exorbitant rates due to planned cut-offs and blanket throttling brought on by non-payment. Mistrust of municipal services is exacerbated by these delays and infrastructure malfunctions. The interview reveals systematic negligence and the daily hardships faced by those living in areas with limited resources, highlighting how vital needs often go unfulfilled.

Brown (2022) noted that in KwaZulu-Natal, infrastructure delays—often lasting more than 72 hours—exacerbate service gaps, pushing vulnerable communities into expensive, unofficial water sourcing and further exacerbating inequity in already overburdened municipal systems. Zero-income households are most severely impacted by prolonged water disruptions, which force them to adopt coping mechanisms that increase reported usage and debt. A resident's

appeal demonstrates how denial of access violates Section 27 of the South African Constitution by undermining dignity (Thompson, 2021).

5.2.1.2 Theme 2: Billing Opacity

Even with a very small household and minimal water usage, billing remains unclear and unjust. A resident described how the amount increased even after they paid R2000 in arrears, leaving them feeling helpless. The situation is made worse by defective meters and a lack of documentation, and Sizakala centre's payment plans do not help much. The system appears to be more concerned with collecting money than providing correct service, which exacerbates the mistrust and frustration of struggling households. Davis (2023) attributes this opacity to technical non-reliability worldwide, indicating that defective metering is responsible for 25–30% overbilling in peri-urban instances, which reduces organisational trust. Smith and Jones (2022) stated that mistrust is cultivated by confusing billing, which results in withholding payments and increases household debt cycles. Although the policy guarantees openness, residents are still exposed to unfair billing due to inadequate audits and segmented systems that disregard actual community needs (Wilson, 2021).

5.2.2 Objective 2: Policy Awareness and Implementation Effectiveness

Unemployed households are susceptible to irregular billing and growing debt due to a lack of knowledge about debt regulations and malfunctioning meters.

5.2.2.1 Theme 3: Affordability Constraints

Policies that provide indigent support often fail to effectively assist families in need, as they are not made aware of such policies firsthand, thereby trapping them in a situation of increasing disadvantage. Thompson (2021) defined affordability as a significant obstacle and notes that households without formal education have a 40% lower level of policy involvement because of structural navigational challenges. Indigent registration procedures, including rigorous evidence requirements, are criticised by Sineke, Potwana, and Chikosha (2023) as a trap for vulnerable populations, resulting in perpetual arrears, which contradicts the Municipal Systems Act's equitable imperatives.

5.2.2.2 Theme 4: Policy Awareness Gaps

Despite numerous trips to Sizakala centres, many residents remain unaware of debt reduction policies. According to one respondent, relying on ward council members frequently results in false information because no one in their home was aware of them. These communication

breakdowns impede the goal of support policies, prolong the resolution process, and exacerbate frustration. Communities often struggle to navigate the system without clear guidance, which exacerbates debt cycles and erodes public confidence in government services.

Wilson (2021) carefully revealed that, due to inadequate community communication, the majority of locals rely on untrustworthy word-of-mouth rather than official channels and are unaware of debt relief options. To alleviate these fissures, Smith and Jones (2022) suggested that, specifically in low-income, semi-rural settings, community workshops, bilingual materials, and engaging resources can increase awareness by 50% and reduce cycles of frustration, inaccurate information, and indebtedness through clear, two-way communication. This theme thus throws light on a crucial systemic malfunction: the lack of mechanisms of inclusive knowledge transfer turns potentially curative policies into useless items, which are not available to the neediest (Sineke, Potwana and Chikosha, 2023).

5.2.2.3 Theme 5: Implementation Inconsistencies

eThekwini Municipality regulatory enforcement seems to be biased toward revenue collection, frequently at the expense of resident welfare and service quality. Even for homes that regularly pay their bills, residents claim that water supply problems—such as leaks or infrastructure failures—are often ignored, while payment compliance is closely monitored. This disparity causes annoyance, particularly when invoicing persists despite extended service interruptions. Sizakala Centre visits, phone conversations, and WhatsApp are often delayed and unproductive channels for complaints, until they are escalated to top officials. Furthermore, erroneous metering systems can overestimate usage, resulting in exorbitant costs. The feeling of institutional injustice is developing as a result of these problems. Similar trends are confirmed in South African municipalities in research by Brown (2022) and Davis (2023), where inaccuracies are exacerbated by the persistent neglect of meter repair, leading to a debt and non-compliance cycle that erodes trust and undermines the ideals of fair service delivery.

5.2.3 Objective 3: Socio-Cultural Influences on Debt Escalation

This objective closely examines how policies are officially articulated, how citizens and the city accept responsibility, and the mindset that establishes patterns of debt and adherence.

5.2.3.1 Theme 6: Cultural Mindsets

Communities are left uninformed and excluded by eThekwini Municipality's inadequately stated and rarely discussed debt management strategies. The respondent, however, acknowledged shared responsibility: municipalities must maintain infrastructure and meters,

and communities must conserve water. Debt will continue to increase in the absence of a proactive municipal response. To ensure equitable, transparent, and accessible water services for every resident, genuine accountability requires both structural changes and education. According to Sineke, Potwana, and Chikosha (2023), a significant gap exists between community reality and top-down enforcement, where strict regulations often foster opposition rather than collaboration. According to Thompson (2021), impoverished households that prioritize survival frequently view money as less relevant when services are inconsistent. This kind of thinking is not only economic; it stems from historical injustice and a lack of faith in local justice. Policies often fail to encourage compliance, instead perpetuating cycles of debt and disappointment in the absence of dependable service and inclusive engagement.

5.2.3.2 Theme 7: Communication Deficits

One of the biggest obstacles to eThekweni's debt management is still information shortfalls. Community gatherings often devolve into unresolved arguments that exacerbate sanitation issues and hinder effective action. Due to service delays, residents report having to purchase water, which is unfair and expensive. Smith and Jones (2022) demonstrated that poor communication raises debt by 20%. Residents often feel disadvantaged, misinformed, and trapped in cycles of debt and poor service, highlighting the critical need for clear, two-way communication, which is essential for inclusive and responsive engagement initiatives.

5.3 Chapter Summary

Although the water and sanitation policies of eThekweni Municipality align with national frameworks, their implementation is inadequate. There is still a lack of community involvement, inefficient billing systems, and unreliable service delivery. Indigent households are particularly impacted by these problems, which weaken confidence and increase debt. Long-term development, constitutional compliance, and financial sustainability all depend on a change to inclusive, transparent, and participatory governance.

CHAPTER 6: RECOMMENDATIONS AND CONCLUSIONS

6.1 Recommendations

6.1.2 Recommendations for Service Reliability and Billing Transparency

It is advisable that eThekweni Municipality execute a number of integrated digital and operational reforms to improve the fairness, integrity, and transparency of municipal billing processes. In addition to improving openness and reducing conflicts, the establishment of secure digital invoicing portals backed by biennial meter-code verification conducted by independent auditors would give households access to real-time consumption data. By enabling consumers to proactively monitor usage, smart prepaid meters would improve financial planning and lower unforeseen costs. Simultaneously, changes to operational procedures would ensure that consumers are not unfairly penalized for defects discovered after several months, for example, by extending the deadline for reporting and fixing leaks. Furthermore, changing the tariff structure for qualified households from a rising-block tariff to a flat-rate model could reduce the financial strain on larger or lower-income households. Collectively, these measures would improve public trust, reduce systemic billing errors, and contribute to a more equitable and sustainable debt-management framework.

6.1.2 Recommendations for Policy Awareness and Implementation

The eThekweni Municipality should implement a more inclusive, technology-enabled, and governance-aligned communication and registration structure in order to overcome enduring access hurdles and enhance the efficacy of local debt-reduction measures. Extensive ward-based outreach would guarantee that low-literacy and vulnerable households receive timely, understandable information about tariffs, payment options, and support mechanisms. This would be accomplished through multilingual digital campaigns, door-to-door engagements, SMS alerts, and targeted social media micro-messaging. Additionally, bureaucratic bottlenecks would be removed by automating indigent registration through smooth cross-referencing between the South African Social Security Agency (SASSA) and municipal rates databases (Wilson, 2021). This would enable proactive enrolment of qualifying households and lessen the administrative burden that frequently leaves out the most vulnerable. Regulatory improvements should include explicit legislative ring-fencing of infrastructure-repair funding to protect service integrity and guarantee that necessary maintenance is unaffected by revenue-collection pressures. Such insulation would encourage equitable, needs-based resource distribution among localities and stop monetary incentives from distorting service priorities.

6.1.3 Recommendations for Socio-Cultural and Communication Reforms

It is further recommended that the eThekweni Municipality establish explicit accountability procedures for Ward Councillors to boost sociocultural participation and enhance community awareness of water conservation. It should be legally mandatory for council members to spearhead organized, door-to-door awareness campaigns that offer easily accessible, language-appropriate instruction on household responsibilities, tariff consequences, and water-saving techniques. Incorporating this duty into their performance commitments will guarantee more regular community engagement, close information gaps, and increase public involvement in water-use efficiency programs. In addition to aligning with participatory governance principles, this strategy upholds the constitutional mandate of council members to improve behavioral compliance and long-term sustainability outcomes by facilitating communication between the municipality and its citizens.

6.1.4 Theoretical recommendations

In contrast to behavioural policy assumptions, the findings show that severe water cut-offs act as a deterrent rather than an incentive to payment compliance. Instead of fostering behavioural conformity, such punitive measures generate frustration, social withdrawal, and disengagement among residents. As Davis (2023) argues, disobedience frequently stems from opaque billing systems and inadequate service delivery rather than deliberate non-compliance. Moreover, fragmentation within municipal operations—where billing, maintenance, and customer support function in isolation—weakens institutional accountability and exacerbates confusion. These operational silos deepen household indebtedness and erode public trust, reinforcing the need for greater transparency, integrated service processes, and compassion-centred approaches to improve governance outcomes for low-income communities.

6.1.5 Practical recommendations

To reduce outages by half, municipal teams should improve meter inspections and deploy emergency repair units. By converting all Sizakala Centres into integrated service hubs that offer education, indigent support, and anonymous billing assistance, access can be made easier, confusion reduced, and residents empowered to interact with water and sanitation services with confidence.

6.1.6 Policy Recommendations

Fair developments, such as smart meters, automatic indigent enrolment, and inclusive community forums, are mandated by national policies, including the Municipal Systems Act and the Free Basic Water policy. These adjustments ensure transparency, dignity, and everyone's fundamental right to receive water by bridging the gaps between policy and reality (Sineke, Potwana and Chikosha, 2023).

6.1.7 Societal Recommendations

Repairing dysfunctional sanitation infrastructure reduces health risks, alleviates the burden of collecting water for women, and fosters trust. These enhancements support democratic principles, advance justice, and improve community well-being in areas where inequality and fragmented governance are prevalent.

6.2 Limitations of the Study

6.2.1 Sample size and Representation

In light of the significant demographic heterogeneity of eThekweni with various income groups, ethnicities, and geographic sub-zones, the single in-depth interview, with all its granular richness and verbatim fidelity, inevitably restricts generalizability by condensing a single peri-urban, zero-income, non-binary view.

6.2.2 Response Bias

Verbatim records may inadvertently draw attention to grievances while overlooking small victories or adaptive behaviours when gathered in an environment of increased discontent. However, rigorous topic coding, researcher reflexivity, and triangulation with recent literature help to lessen this constraint (Davis, 2023).

6.3 Recommendations to Overcome Limitations

To promote the development of temporal resilience, improved representativeness, and causal inference, adopt prospectively hybrid mixed-methodology frameworks that incorporate large-scale quantitative surveys ($n > 200$, stratified within wards), multi-site case studies within various municipalities (urban vs. rural), and longitudinal panel data collection.

6.4 Future Research Recommendations

I recommend that future research measure how smart meters and changes in user behaviour contribute to lower household debt levels by conducting before-and-after studies. Moreover,

studies should examine the potential applications of AI-driven predictive maintenance algorithms to improve infrastructure resilience and to model failure risk, thereby allocating resources as efficiently as possible. In addition, future studies should be comparative research with the municipalities that have already tried giving residents a choice to have prepaid smart water meters to examine the efficacy of that decision in decreasing debt escalation

6.5 Contribution to the Body of Knowledge

This study contributes to the body of knowledge by providing an empirically based examination of the fundamental causes of household water and sanitation debt in settings characterized by structural inequality, disjointed governance, and inconsistent service delivery. The study offers a multifaceted explanation of how billing opacity, infrastructural failures, and affordability pressures influence household payment behavior by combining the Capability Approach, Public Choice Theory, and Human Rights-Based viewpoints. From a methodological standpoint, it illustrates the usefulness of qualitative thematic analysis in identifying patterns of mistrust and coping mechanisms that are frequently missed in quantitative reporting. The results provide eThekweni with context-specific insights that guide more integrated, transparent, and fair municipal debt management methods.

6.6 Managerial Implications of the Study

The study highlights the need for managers to strengthen transparency, integrate billing and maintenance functions, and prioritise affordability-sensitive policies. Improving communication, enhancing accountability mechanisms, and adopting data-driven monitoring tools will enable managers to address service unreliability, rebuild public trust, and implement more equitable and financially sustainable debt-management strategies.

6.7 Practical Solutions Implications

The study suggests that practical solutions should prioritise transparent billing systems, proactive community engagement, and improved service reliability. Integrating digital platforms, simplifying indigent registration, and strengthening leak-response protocols can reduce household debt burdens. Implementing these solutions enhances institutional accountability, promotes equitable access, and supports more sustainable municipal revenue management.

6.5 Conclusion

This chapter offers practical recommendations to improve socio-cultural communication, policy awareness, billing transparency, and service reliability in eThekweni municipality's water and sanitation systems. The municipality may provide inclusive access to services, lower household debt, and foster trust by implementing smart meters, digital billing portals, and multilingual outreach. Vulnerable households will receive additional support if tariff regulations and delays in leak notification are addressed. The study's shortcomings, including its small sample size and potential response bias, were noted, along with recommendations for more extensive, mixed-methods research to improve future results. Promising avenues for advancement include comparative research and the application of cutting-edge technologies, such as AI-driven maintenance. Ultimately, fulfilling constitutional obligations and advancing sustainable development require a shift toward transparent, participatory governance.

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APPENDICES

Appendix A: Interview schedule (data collection tool)

Data Collection Tool: Interview Questions

Research Title: Investigating the Effectiveness of Policies on Household Water and Sanitation Debt Escalation at eThekweni Municipality.

Instructions

Please answer the following questions as accurately as possible. Your responses will remain confidential and will only be used for research purposes.

Section A

Demographics

Mark with X where appropriate

1. Gender

M		F	
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2. Age

Below 18		18-24		25-34		35-44		45-54		55 - 64		65+	
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3. Marital status

Married		Divorced		Widowed		Single		Rather not say	
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Socio-economic status

4. Educational status

No schooling	
Primary school	
Secondary school (grade 10)	

Secondary school (grade 12)	
Two-year diploma	
Three/four-year tertiary education	
Postgraduate degree	

Specify.....

5. How many people live in your household?

1-3	
4-6	
7 and above	

6. What is the income level of your household?

R0	
Less the R350	
R350-R1000	
R1001-R3000	
R3001-R5000	
Over R5000	

7. What is the source of household income?

None	
Child support grant	
Wages	

Salary	
Pension	
Allowance from relatives	
Disability grant income	
Other	

Specify.....

8. How long have you lived in this area?

Less than a year	
1-5 years	
6-10 years	
Over 10 years	

Section B: Interview questions aligned to objectives:

Objective 1: To identify and examine the key socioeconomic and structural factors contributing to the rise in household water and sanitation debt and non-payment within the eThekweni Municipality.

1. How does your household access water and sanitation services? (For example: Access to water through household connections, shared public taps, or alternative supply systems)
2. What are the primary uses of water in your home? (E.g., consumption, meal preparation, household chores, personal hygiene, outdoor maintenance, etc.)
3. How reliable are your water and sanitation services, and how would you rate the quality of service? (e.g., frequency of supply, interruptions, and maintenance.)
4. How does your household receive water and sanitation bills, and how are they usually paid? (E.g., paper bills, SMS, online platforms, municipal offices, etc.)
5. Has your household ever missed a payment for water or sanitation services? If yes, what were the reasons?
6. What happened after you missed a payment? (Were services interrupted? Were you contacted by the municipality, etc.?)
7. Do you feel the municipality handles non-payment of water and sanitation services fairly? Why or why not?
8. How would you describe the communication between your community and the municipality regarding water and sanitation issues? (Is it responsive, accessible, transparent, etc.?)

Objective 2: To evaluate the effectiveness of the Credit Control and Debt Collection Policy and the Indigent Policy in ensuring equitable household access to water and sanitation services in eThekweni Municipality.

1. Are you aware of the Indigent and Debt Collection and Credit Policy? If yes, how did you learn about it, and how do you understand it?
2. Have these policies ever benefited your household or the households you work with? If so, how did the procedure go? If not, what was the reason?
3. Do you believe the requirements for receiving indigent assistance are reasonable and equitable? If not, how so?

4. Is the Credit Control and Debt Collection Policy applied equitably to various regions or socioeconomic categories in eThekweni? If no, why?
5. How successful, in your opinion, are these regulations in guaranteeing that every home has equitable and continuous access to water and sanitation services?
6. Has your area's household debt associated with water and sanitation decreased due to these policies? If not, what do you believe to be the primary obstacles?
7. How well does the municipality inform the public about the availability and terms of these policies?
8. What water management devices are available? How would you describe their level of effectiveness?

Objective 3: To develop strategies that promote community involvement in reducing household water and sanitation debt escalation in eThekweni Municipality.

1. To what extent do members of your community understand the problems associated with household debt for water and sanitation? Are these topics discussed in public?
2. Do you believe that the residents, the municipality, or both are primarily responsible for lowering the debt associated with water and sanitation? Why?
3. Do members of your community have the motivation to pay for water and sanitation services consistently? If not, what are the primary causes (such as lack of information, distrust, or affordability)?
4. How would you describe sharing information on water bills, debts, or policies between the community and the municipality?
5. Do you trust the existing processes for service delivery, debt collection, and the billing system? If not, why not?
6. Do you believe that social or cultural beliefs influence how individuals in your community approach water consumption and payment? How can participation be encouraged while addressing or respecting these beliefs?

Ithuluzi Lokuqoqwa Kwedatha: Imibuzo Yengxoxo

Isihloko Socwaningo: Ukuphenya Ukusebenza Kwezinqubomgomo Ekwenyukeni Kwezikweletu Zamanzi Asekhaya Nokuthuthwa Kwendle kuMasipala waseTheku.

Imiyalo

Sicela uphendule imibuzo elandelayo ngokunembe ngangokunokwenzeka. Izimpendulo zakho zizohlala ziyimfihlo futhi zizosetshenziselwa izinjongo zocwaningo kuphela.

Isigaba A

Izibalo zabantu

Maka ngo-X lapho kufanele khona

1.Ubulili

Owesilisa		Owesifazane	
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2.Ubudala

Ngaphansi kuka-18		18-24		25-34		35-44		45-54		55 - 64		65+	
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3.Isimo somshado

Oshadile		Ohlukanisile		Umfelokazi/Umfelwa		Ongashadile		Noma ningasho	
----------	--	--------------	--	--------------------	--	-------------	--	------------------	--

Isimo senhlalo-mnotho

4.Isimo semfundo

Angiyanga esikoleni	
Isikole samabanga aphansi	
Isikole samabanga aphezulu (ibanga le-10)	

Isikole samabanga aphezulu (ibanga le-12)	
Idiploma yeminyaka emibili	
Imfundo ephakeme yeminyaka emithathu/emine	
Iziqu ze-Postgraduate	

Chaza okunye.....

5. Bangaki abantu abahlala emzini wakho?

1-3	
4-6	
7 and above	

6. Liyimalini izinga lemali engenayo yomuzi wakho ngeyanga?

R0	
Ngaphansi kuka- R350	
R350-R1000	
R1001-R3000	
R3001-R5000	
Ngaphezu kuka R5000	

7. Uyini umthombo wemali engenayo yasekhaya?

Awukho	
Isinonelelo sokubonelela izingane sikaHulumeni	
Inkokhelo	
Umholo	
Impesheni kaHulumeni	
Imvume evela ezihlotsheni	
Imali yesibonelelo sokukhubazeka kaHulumeni	
Ezinye	

Cabaza.....

8.Uhlale isikhathi esingakanani kule ndawo?

Kungakapheli unyaka	
1-5 iminyaka	
Iminyaka 6-10	
Kungaphezu kweminyaka eyi10	

Isigaba B: Imibuzo yezingxoxo ehambisana nezinjongo:

Inhloso 1: Ukuhlonza nokuhlola izici ezibalulekile zenhlalo-mnotho kanye nesakhiwo ezinomthelela ekwenyukeni kwesikweletu samanzi asendlini kanye nokukhucululwa kwendle kanye nokungakhokhi kuMasipala weTheku.

1. Umuzi wakho uwathola kanjani amanzi nokuthuthwa kwendle? (Isibonelo: Ukufinyelela emanzini ngokuxhunywa kwasekhaya, ompompi abahlanganyelwe basesidlangalaleni, noma ezinye izinhlelo zokuhlinzeka)

2. Kuyini ukusetshenziswa kwamanzi okuyinhloko ekhaya lakho? (Isb, ukusetshenziswa, ukulungiswa kokudla, imisebenzi yasekhaya, inhlanzeko yomuntu siqu, ukunakekelwa kwangaphandle, njll.)

3. Zithembeke kangakanani izinsiza zakho zamanzi nokuthuthwa kwendle, futhi ungalikala kanjani izinga lenkonzo? (isb, imvamisa yokuhlinzeka, ukuphazamiseka, nokugcinwa.)

4. Umuzi wakho uzithola kanjani izikweletu zamanzi nezokuthuthwa kwendle, futhi zivame ukukhokhelwa kanjani? (Isb, izikweletu zephepha, i-SMS, izinkundla zeinthanethi, amahhovisi kamasipala, njll.)

5. Ingabe umuzi wakho wake waphuthelwa yinkokhelo yamanzi noma yokuthuthwa kwendle? Uma yebo, zaziqini izizathu?

6. Kwenzekeni ngemva kokuphuthelwa yinkokhelo? (Ingabe amasevisi aphazamisekile? Ingabe uthintwe umasipala, njll.?)

7. Ingabe unomuzwa wokuthi umasipala uphatha ngendlela engafanele ukungakhokhelwa kwamanzi nokuthuthwa kwendle? Kungani noma kungani kungenjalo?

8. Ungakuchaza kanjani ukuxhumana phakathi komphakathi wakho nomasipala mayelana nezindaba zamanzi nokuthuthwa kwendle? (Ingabe iyasabela, iyafinyeleleka, isobala, njll.?)

Inhloso yesi-2: Ukuhlola ukusebenza kahle kweNqubomgomo Yokulawulwa Kwezikweletu kanye Nokuqoqwa Kwezikweletu kanye Nenqubomgomo Yabantu Abampofu ekuqinisekiseni ukufinyelela ngokulinganayo kwekhaya emanzini nasezinsizeni zokukhucululwa kwendle kuMasipala waseTheku.

1. Ingabe uyayazi Inqubomgomo Yokuqoqwa Kwezikweletu Nezikweletu? Uma yebo, ufunde kanjani ngakho, futhi ukuqonda kanjani?

2. Ingabe lezi zinqubomgomo zike zawuzuzisa umuzi wakho noma amakhaya osebenza nawo? Uma kunjalo, inqubo yahamba kanjani? Uma kungenjalo, sasiyini isizathu?
3. Ingabe ukholelwa ukuthi izidingo zokuthola usizo lwabampofu zinengqondo futhi ziyalingana? Uma kungenjalo, kanjani?
4. Ingabe Inqubomgomo Yokulawulwa Kwezikweletu Nokuqoqwa Kwezikweletu isetshenziswa ngokulinganayo ezifundeni ezihlukahlukene noma ezigabeni zenhlalomnotho kuTheku? Uma cha, kungani?
5. Iphumelele kangakanani, ngokubona kwakho, le mithethonqubo ekuqinisekiseni ukuthi yonke imizi inokufinyelela ngokulinganayo nangokuqhubekayo emanzini nasezinsizeni zokukhucululwa kwendle?
6. Ingabe isikweletu sasendlini yangakini esihlobene namanzi nokuthuthwa kwendle sehlile ngenxa yale migomo?

Uma kungenjalo, yini okholelwa ukuthi iyizithiyo eziyinhloko?

7. Umasipala uwazisa kahle kangakanani umphakathi ngokutholakala nemibandela yale migomo?
8. Yiziphi izisetshenziswa zokulawula amanzi ezitholakalayo? Ungalichaza kanjani izinga labo lokusebenza ngempumelelo?

Inhloso yesi-3: Ukwakha amasu akhuthaza ukuzibandakanya komphakathi ekwehliseni izinga lokukhuphuka kwezikweletu zamanzi asekhaya kanye nokuthuthwa kwendle kuMasipala weTheku.

1. Amalungu omphakathi wakho aziqonda kangakanani izinkinga ezihlobene nesikweletu sasekhaya samanzi nokuthuthwa kwendle? Ingabe lezi zihloko kuxoxwa ngazo esidlangalaleni?
2. Uyakholwa yini ukuthi izakhamuzi, umasipala, noma bobabili banesibopho ngokuyinhloko sokwehlisa isikweletu esihlobene namanzi nokuthuthwa kwendle? Kungani?
3. Ingabe amalungu omphakathi wakho anaso isisusa sokukhokhela amanzi kanye nezinsiza zokuthuthwa kwendle ngokungaguquki? Uma kungenjalo, yiziphi izimbangela eziyinhloko (njengokuntuleka kolwazi, ukungathembani, noma ukufinyeleleka)?

4.Ungaluchaza kanjani ulwazi lokwabelana ngezikweletu zamanzi, izikweletu, noma izinqubomgomo phakathi komphakathi nomasipala?

5.Ingabe uyazethemba izinqubo ezikhona zokulethwa kwesevisi, ukuqoqwa kwezikweletu, nohlelo lokukhokha? Uma kungenjalo, kungani kungenjalo?

6.Uyakholelwa ukuthi izinkolelo zezehlalo noma zamasiko zinethonya endleleni abantu emphakathini wakho ababhekana ngayo nokusetshenziswa kwamanzi nokukhokha? Ukuhlanganyela kungakhuthazwa kanjani ngenkathi kukhulunywa noma kuhlonishwa lezi zinkolelo?

APPENDIX

Appendix B: Ethical clearance certificate



23 September 2025

Bongiwe Beryl Nkosi (219017913)
Grad School of Bus & Leadership (Prior Restructuring)
Westville Campus

Dear BB Nkosi,

Protocol reference number: HSSREC/00009363/2025

Project title: Investigating the effectiveness of Policies on household water and sanitation debt escalation at Ethekewini Municipality

Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 27 August 2025 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

Incidents of adverse events and serious adverse events (AEs and SAEs) should be reported in writing to HSSREC, the study sponsors, and any regulatory authority (where appropriate), within 7 working days of the occurrence for local sites and 14 days for all other South African sites.

This approval is valid until 23 September 2026.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

HSSREC is registered with the South African National Health Research Ethics Council (REC-040414-040).

Yours sincerely,

Doctor Shamila Naidoo (Interim Chair)

/dd

Humanities and Social Sciences Research Ethics Committee

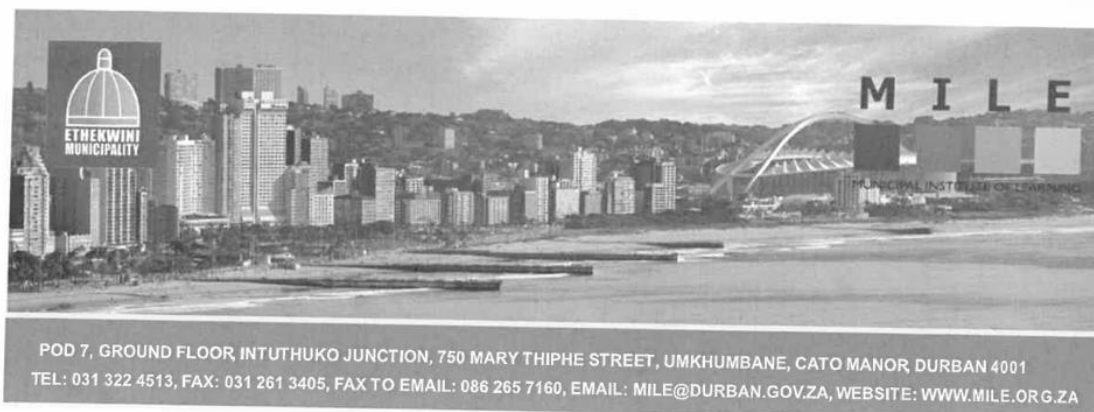
Postal Address: Private Bag X54001, Durban, 4000, South Africa

Telephone: +27 (0)31 260 8350/4557/3587 Email: hssrec@ukzn.ac.za Website: <http://research.ukzn.ac.za/Research-Ethics>

Founding Campuses: Edgewood Howard College Medical School Pietermaritzburg Westville

INSPIRING GREATNESS

APPENDIX
Appendix C: Gatekeepers letter



For attention:
Chair of Research Ethics Committee
University of KwaZulu-Natal
School of Business and Leadership
Durban
4001

23 May 2025

RE: LETTER OF SUPPORT B. NKOSI STUDENT NO: 219017913- GRANTING PERMISSION TO USE
ETHEKWINI MUNICIPALITY AS A STUDY SITE

The eThekweni Water and Sanitation Unit and Municipal Institute of Learning (MILE) in eThekweni Municipality, have considered a request from **Bongiwe Nkosi** (Ms) to use eThekweni Municipality as a research study site for the purposes of undertaking a research study entitled: ***Investigating Effectiveness of Policies on household water and sanitation debt escalation at eThekweni Municipality.*** - leading to the awarding of a Master of Commerce Leadership Studies degree.

We wish to inform you of the acceptance of this request and hereby assure the student of our utmost cooperation towards achieving her academic goals; the outcome which we believe may help this municipality improve its evidence-base on the policy implications of water and sanitation debt escalation. The student is reminded of the ethical considerations for responsible research and current health regulations when conducting this research. The student must take all necessary measures to ensure her personal safety during the research period as eThekweni Municipality indemnifies itself from any incidental claims that may arise. **In return, we stipulate as mandatory that the student contacts sthabile.mbongwa@durban.gov.za to present the preliminary results and recommendations of this study to the related unit/s.**

Wishing the student all the best in her studies.

.....
Ms. Pinky Kunene
PP Head: Water and Sanitation
eThekweni Municipality

.....
Dr. Conny Piay
Program Manager: MILE
eThekweni Municipality

Bongiwe Nkosi

Ihereby accept as mandatory that I will comply fully
as per the conditions stipulated above.

Signed: Date: **23 May 2025**

APPENDIX

Appendix D: Informed consent form

UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE (HSSREC)

APPLICATION FOR ETHICS APPROVAL

For research with human participants

INFORMED CONSENT RESOURCE

Information Sheet and Consent to Participate in Research

Date: 2025 September 24

Dear Respondent,

My name is Bongiwe Nkosi, a Master of Commerce Leadership Studies Student at the University of KwaZulu-Natal, Student Number:219017913, who also happens to work for eThekweni Municipality. My contact numbers are ■■■■■■■■■■ and email address: 219017913@stu.ukzn.ac.za.

You are invited to participate in a study that involves a research topic: Investigating the Effectiveness of Policies on household Water and Sanitation debt escalation at eThekweni Municipality.

This study aims to assess the impact of municipal water management policies on household water debt. The study is expected to enroll participants as general customers and Municipal Officials. The study will involve completing semi-structured interview questions with respondents that will take approximately 20 to 30 minutes.

All information you provide will be kept confidential and will only be used for research purposes. Data will be anonymized before analysis. Your participation in this study is entirely voluntary. You may choose to withdraw at any time without penalty.

APPENDIX

Consent: I have read and understood the above information. I consent to participate in the study conducted by Bongwiwe Nkosi.

This study has been ethically reviewed and approved by the UKZN Graduate School of Business and Leadership Research Ethics Committee, approval number **HSSREC/00009363/2025**

There is no risk associated with your participation in this study, as anonymity is guaranteed. Your name will not be mentioned anywhere in the research report. We hope this study will provide solutions that will improve the operations of eThekweni Municipality by addressing the effectiveness of Policies on Household Water and Sanitation Debt escalation at eThekweni Municipality.

In the event of any problems or concerns, you may contact: The Researcher on [REDACTED] email 219017913@stu.ukzn.ac.za, Or, BREC UKZN Oct 2008 1

The Researchers Supervisor, Professor Bibi Chummum on:

- Email: ChummunB@ukzn.ac.za and/or:
- Physical Address: GSB&L Building, UKZN Westville Campus, Westville, Durban, 3630

Or,

The UKZN Humanities & Social Sciences Research Ethics Committee contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

APPENDIX

I hereby provide consent to:

Semi-structured interview YES / NO

Audio Record YES / NO

Signature of Participant Date

Informed Consent Form: IsiZulu

**UKZN HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE
(HSSREC)**

ISICELO SOKUGUNYAZWA KWEZIMISO ZOKUZIPHATHA

Okokucwaninga nabahlanganyeli abangabantu

INSIZA YEMVUME ENOLWAZI

Ishidi Lolwazi kanye Nemvume Yokubamba iqhaza Ocwaningweni

Idethi: 2025 Septhemba 24

Ummangalelwa othandekayo,

Igama lami nginguBongiwe Nkosi, i-Master of Commerce Leadership Studies Student eNyuvesi yaKwaZulu-Natal, Inombolo Yabafundi:219017913, ophinde asebenze kuMasipala waseTheku. Izinombolo zami zokuxhumana zithi [REDACTED] kanye nekheli le-imeyili: 219017913@stu.ukzn.ac.za.

Umenywe ukuthi ubambe iqhaza ocwaningweni olubandakanya isihloko socwaningo: Ukuphenya Ukusebenza Kwezinqubomgomo mayelana nokwenyuka kwezikweletu zamanzi asekhaya kanye nokuthuthwa kwendle kuMasipala waseTheku.

Lolu cwaningo luhlose ukuhlola umthelela wezinqubomgomo zokulawulwa kwamanzi zikamasipala esikweletini samanzi sasendlini. Lolu cwaningo kulindeleke ukuthi lubhalise ababambiqhaza njengamakhassimende ajwayelekile kanye nezikhulu zikaMasipala. Ucwaningo luzobandakanya ukuqedela imibuzo yenhlolokhono enesakhiwo esincane nabaphendulayo ezothatha cishe imizuzu engama-20 kuye kwengama-30.

Lonke ulwazi olunikezayo luzogcinwa luyimfihlo futhi luzosetshenziselwa izinjongo zocwaningo kuphela. Idatha izodalulwa ngaphambi kokuhlaziywa. Ukubamba iqhaza kwakho kulolu cwaningo kungokuzithandela ngokuphelele. Ungase ukhethe ukuhoxa noma nini ngaphandle kwesijeziso.

Imvume: Ngifunde futhi ngaluqonda ulwazi olungenhla. Ngiyavuma ukubamba iqhaza ocwaningweni olwenziwa nguBongiwe Nkosi.

Lolu cwaningo lubuyekwezwe ngokuziphatha futhi lwagunyazwa yiKomidi Lezimiso Zokuziphatha Lesikole Sebhizinisi Nobuholi sase-UKZN, inombolo yokugunyazwa **HSSREC/00009363/2025**.

Abukho ubungozi obuhlobene nokubamba iqhaza kwakho kulolu cwaningo, njengoba ukungaziwa kuqinisekisiwe. Igama lakho ngeke lishiwo noma yikuphi embikweni wocwaningo. Siyethemba ukuthi lolu cwaningo luzohlinzeka ngezixazululo ezizothuthukisa ukusebenza kukaMasipala weTheku ngokubhekana nempumelelo Yezinqubomgomo Zokukhuphuka Kwezikweletu Zamanzi Asekhaya Nokuthuthwa Kwendle kuMasipala weTheku.

Uma kwenzeka kuba nezinkinga noma ukukhathazeka, ungase uthinte:

Umcwaningi ku-imeyili engu- 219017913@stu.ukzn.ac.za,

Noma,

Umpathi Wabacwaningi, uSolwazi Bibi Chummum ku: • I-

imeyili: ChummunB@ukzn.ac.za futhi/noma:

• Ikheli Lomzimba: GSB&L Building, UKZN Westville Campus, Westville, Durban, 3630

Noma ,

I-UKZN Humanities & Social Sciences Research Ethics Committee ithintana neminingwane kanje:

I-HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Ihhovisi Lokucwaninga, Ikhampasi yaseWestville

1. Govan Mbeki Building
Private Bag X 54001
Durban
4000

I-Tel: 27 31 2604557- Ifeksi: 27 31 2604609

I-imeyili: HSSREC@ukzn.ac.za

Ngalokhu nginikeza imvume:


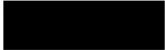
Ingxoxo eyakhiwe kancane YEBO /CHA

Irekhodi Lomsindo

YEBO /CHA

Isiginesha Yosuku Lombambiqhaza

Appendix E: Editing Certificate

 websolutions	RS WEB SOLUTIONS MEDIA & EDITING SERVICES	
CERTIFICATE OF EDITING		
<p>This document certifies that a copy of the thesis whose title appears below was edited for proper English language usage, grammar, punctuation, spelling, and overall style by Shamiel Johnson whose academic qualifications appear in the footer of this document. The research content and the author's intentions were not altered during the editing process.</p>		
TITLE:		
Investigating the Effectiveness of Policies on Household Water and Sanitation Debt Escalation at eThekweni Municipality		
STUDENT:		
Bongiwe Beryl Nkosi 219017913		
Yours faithfully		
Shamiel Johnson 23 March 2026		
BSc Mech Eng (Hons) UCT Master of Business Administration (M.B.A.) NMMU Business School		