

UNIVERSITY OF THE
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**How the upgrading of informal settlements is
measured by the multisectoral organizations.**

Research Report

2413509

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Abstract

This master's research paper investigates the diverse methodologies employed by multisectoral organizations in measuring the success of informal settlement upgrading initiatives. Focusing on South Africa, the study focuses on what informal settlements upgrading is, the measurement and indicators utilized by these organizations to gauge the effectiveness of their interventions.

Utilizing a qualitative research design, this study employs qualitative interviews to capture the breadth and depth of informal settlements upgrading and the measurement practices. Qualitative interviews with key stakeholders provided nuanced insights into the rationale behind chosen metrics, challenges faced in measurement, and the perceived outcomes of the upgrading efforts.

Findings reveal consistent and coherent measurement practices across different organizations, reflecting the common goal of upgrading informal settlements instead of eradicating them as eradication could be interpreted differently and might cause distress to communities. The study explores commonalities and variations in metrics, shedding light on the factors influencing organizational choices in measurement frameworks.

This research contributes to the scholarship on urban development by providing a comprehensive understanding of how multisectoral organizations approach the measurement of informal settlement upgrading. The insights gained from this study have the potential to inform best practices, enhance cross-sectoral collaboration, and guide the development of standardized metrics for evaluating the impact of multisectoral interventions on informal settlements.

Keywords: informal settlements, urban upgrading, multisectoral organizations, measurement metrics, indicators, urban development, basic services, communities.

Declaration

I, Keneilwe Jeanette Pholo declare that this master's research study, titled "How the upgrading of informal settlements is measured by the multisectoral organizations.," is my original work and has been conducted under the guidance of my academic advisor, Prof Caitlin Blaser- Mapitsa, at University of the Witwatersrand. This research is submitted in partial fulfilment of the requirements for the Master of Management degree.

I affirm that:

1. The work presented in this study is the result of my own intellectual efforts, with due acknowledgment given to any external sources used, and is free from any form of plagiarism or academic misconduct.
2. Ethical considerations, including the treatment of human subjects, have been addressed in accordance with the guidelines and protocols set by the Ethics committee. Informed consent was obtained from all participants involved in the study.
3. The data presented and analysed in this study are accurate and have been collected using appropriate research methodologies. Any limitations or potential biases are transparently discussed in the respective sections of this report.
4. All data, findings, and conclusions presented in this report represent an honest and unbiased account of the research conducted. Any deviations from the original research plan are appropriately explained and justified.
5. This research complies with the ethical standards and guidelines outlined by the ethics committee at the University of Witwatersrand, and all necessary permissions and approvals have been obtained.

I understand that any breach of academic integrity or ethical standards in the conduct of this research may have serious consequences, including the potential rejection of this report.

Keneilwe Jeanette Pholo

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Sincerely

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List of Acronyms

CP	–	Community Participation
GIS	–	Geographic Information Systems
HDA	–	Housing Development Agency
HPU	–	Housing Project Unit
NDP	–	National Development Plan
NUSP	-	National Upgrading Support Programme
NSDF	–	National Spatial Development Framework
RDP	-	Reconstruction and Development Programme
UISP	–	Upgrading of Informal Settlements Programme
UNCHS	-	United Nations Centre for Human Settlements
UN	–	United Nations
UN-Habitat	–	United Nations Human Settlements Programme
USA	–	States of America
SDG	–	Sustainable Development Goals

CHAPTER ONE: INTRODUCTION

1.1. Introduction

Informal Settlements are a reality for many countries and South Africa is no exception. It has been reported by many authors (Galea & Vlahov 2002; Smith 2001; Simon 2016) that it is one of the major phenomena associated with migration and urbanization process worldwide. Marutlulle (2021) views informal settlements as Government's failure to provide adequate housing. While Elsayed & Nassar (2018) have described informal settlements as a solution to the high housing demand in urban areas, and other scholars view them as an environmental and sustainability challenge. In 2009, over 2 million households were reported to be living in Informal housing in South Africa (Del Mistro & Hensher 2009). The Government has put in place alternative housing options, but these options are not sufficient for the urban population and their standard of living (Del Mistro & Hensher 2009).

The housing backlog in South Africa together with the limited options when it comes to housing subsidies leave many people with no choice but to settle in shacks in Informal settlements (Mutsonziwa & Richard, 2007). According to studies by Davey and Khalifa (2015), the expansion of informal settlements could also be associated with the mismatch between housing supply and demand and the inefficient rent control laws in different countries.

Sustainable cities and communities' conversations have become common in the past decade. Different countries are working towards building sustainable cities. To achieve sustainable cities, housing and infrastructure are the center of the conversations; lack of supply and problems of affordability have created persistent social and economic pressures. Among the many reasons why urban areas battle the challenge of providing adequate housing for the demand, urbanization is the most common factor. Urbanization is the migration of people from rural areas to urban areas for different reasons, one of the most common reasons is to look for better opportunities (Simon, 2016). Urbanization comes with the good and the bad, and some of the bad sides of urbanization are the increased population density, consumption of resources, and emissions of waste and harmful particles and materials to the environment (Simon, 2016). The continuation of urbanization and the depletion of resources are not sustainable for cities and urban communities which is why the conversations around building sustainable cities and

communities have been important and urgent. The poor city planning and leadership in South Africa have allowed growing differences to find physical expression, where the rich stay in gated communities with lower population densities, closer to their workplaces, and can afford private cars, versus the poor that stay in highly populated areas, further away from the city centres and their workplaces, using public transport to travel for hours from home to work (Simon, 2016). While the poor stay in environmentally hazardous areas that are socially excluded and are faced by different challenges. The challenges present in informal settlements, such as inadequate housing, limited access to basic services, and exposure to environmental risks, underscore the importance of upgrading initiatives. These settlements often exist in precarious conditions, which contribute to increased social vulnerability and environmental degradation. Upgrading these areas is critical to improving the overall quality of life, enhancing social equity, and fostering sustainable urban development. Scholars like Castán Broto and Neves Alves (2018) emphasize the need for co-produced urban services that address the complexities of informal settlements, making upgrading crucial for both social and environmental resilience.

The goal of upgrading initiatives is to implement practical solutions that address the residents' immediate needs while ensuring long-term sustainability. This includes improving infrastructure, securing tenure rights, and enhancing access to essential services, which can empower communities and mitigate various vulnerabilities associated with informal living conditions. The success of such interventions is often linked to their ability to foster inclusive, resilient urban spaces, as highlighted by the work of Cities Alliance (2020), which advocates for systematic slum upgrading as a policy framework. This research study is not only focused on informal settlements challenges and upgrading but also on the measurements of the upgrading projects.

Monitoring and evaluation (M&E) play crucial roles in the success and sustainability of human settlements projects. Scholars emphasize the significance of systematic and ongoing assessment processes to ensure the effectiveness, efficiency, and social impact of interventions in urban development. Human settlements projects, encompassing housing initiatives, infrastructure development, and community enhancements, require rigorous monitoring and evaluation mechanisms to gauge their impact on residents' well-being and the broader urban fabric. Scholars have recognized M&E as an indispensable aspect of project management, facilitating

evidence-based decision-making and contributing to sustainable urban development (Keeley et al., 2014; Rojas et al., 2017). The role of Monitoring and Evaluation in urban development has been widely accepted as crucial to ensuring timely delivery of projects. Effective M&E systems provide real-time insights into project progress, allowing for timely adjustments and improvements (Van Hemel et al., 2019). Scholars assert that M&E processes serve as accountability mechanisms, ensuring that projects align with predefined goals and meet the needs of diverse urban populations (Carmin et al., 2012; Satterthwaite, 2015). Scholars highlight multiple dimensions of M&E that are pertinent to human settlements projects. These include assessing the social impact on marginalized communities, evaluating the environmental sustainability of interventions, and examining the economic implications for residents (UN-Habitat, 2016; Bunch, 2010). Integrating these dimensions ensures a holistic understanding of the project's outcomes. While scholars recognize the benefits of M&E, they also acknowledge challenges, such as resource constraints and the need for capacity building in local governance (Boonyabancha, 2019; Mitlin and Satterthwaite, 2013;). To address these challenges, scholars emphasize the importance of leveraging technology, building local capacities, and establishing partnerships across sectors (Bamberger and Rugh, 2016; Tacoli and Satterthwaite, 2019).

This study will adopt Oni & Weimann (2006)'s description of informal settlements which is premised on the theory of precarity, they describe informal settlements as settlements characterized by poor housing structures (mainly shacks and mud houses in South Africa), lacking basic services (water, electricity and roads) and built on land parcels that are not formalized or established. The definition is more relevant to the South African context, as informal settlements are located on land that has not been surveyed or proclaimed as a residential area, and they are characterized by dilapidated and poor housing structures, no tar roads to very bad roads, illegal power connections and water access struggles.

The motivation for undertaking this research is that I have recognized the critical need for empirical insights in the field of urban development. Informal settlements, characterized many challenges, necessitate systematic and comprehensive upgrading strategies. The decision to delve into the measurement methodologies employed by multisectoral organizations stems from the inherent complexity of informal settlements upgrading initiatives and the diverse range of

factors influencing their success. Understanding how these interventions are assessed by multisectoral entities is crucial for refining and optimizing future urban development policies. The study seeks to bridge a notable gap in the existing literature by discussing the indicators, metrics, and evaluation frameworks utilized by multisectoral organizations in gauging the impact and efficacy of informal settlements upgrading. By explaining these measurement processes, the research aspires to contribute to evidence-based policymaking, foster accountability, and inform more targeted, efficient, and socially equitable upgrading strategies within the realm of urban development.

To come to an understanding of upgrading and measurement, the research started with literature review from local and international literature by other scholars in the field of urban development and M&E. The literature review was then to develop the key research questions that have influenced the data collection method. The focus is on urban development and as such, the reports, literature and interviews are from organizations within the urban development sector. The sections that follow detail the research approach which includes the reasons for the choices made, then key research findings, and the last section is on conclusion and recommendations.

1.1 Research Focus

The research focused on how the upgrading of informal settlements is measured by the multisectoral organizations in South Africa. A sample of organizations including United Nations Human Settlements Programme (UN-Habitat), Housing Development Agency (HDA), City of Ekurhuleni participated in the study. The research defined what informal settlements are, investigated the different upgrading approach undertaken by different organizations and the different measurement indicators and tools used to monitor and evaluate the upgrading of informal settlements. After compiling literature review, a sample of reports from different organizations were collected to review their upgrading approach and measurement to Informal settlements upgrading, and conducted interviews with selected staff members were conducted. The literature review assisted in preparation for interview with participants, it refined the questions more and structured them best to answer the research questions.

1.2 Why a narrow focus on the urban development sector

The research focused on urban development in South Africa with a specific emphasis on informal settlements due to the compelling and urgent need to address the intricate challenges faced by marginalized urban populations. South Africa, as a country marked by historical spatial inequalities and the enduring legacies of apartheid policies, has witnessed a rapid increase of informal settlements characterized by inadequate housing, limited access to basic services, and social marginalization. The decision to concentrate on informal settlements aligns with the acknowledgment by scholars such as Todes et al. (2010), Serfontein and Oranje (2008), and other urban development experts like Huchzermeyer (2011) and Parnell & Pieterse (2014), who argue that these settlements epitomize enduring socio-spatial inefficiencies resulting from historical injustices. These areas are often characterized by inadequate access to essential services and marginalization from formal urban systems, a reflection of deeply entrenched patterns of inequality that persist in many cities globally, but particularly in post-apartheid South Africa (Marx & Charlton, 2003; Harrison et al., 2014). This focus recognizes the necessity of targeted upgrading interventions that address both the physical infrastructure and the socio-political conditions in which informal settlements exist.

This is supported by the view that addressing these inefficiencies is key to promoting equitable and sustainable urban development (UN-Habitat, 2015). Urban planners, such as Watson (2009), have stressed the importance of integrating informal settlements into the broader urban fabric through inclusive and participatory planning processes, which is echoed in the New Urbanism and incremental upgrading approaches being discussed internationally (Turok & Borel-Saladin, 2016).

The other reason for conducting a study on urban development and informal settlements is that it is particularly important as we approach the target year of 2030 for achieving the Sustainable Development Goals (SDGs). With the global commitment to eradicate poverty, promote sustainable development, and ensure inclusive urbanization through SDG 11, the significance of understanding and addressing informal settlements within the broader context of urban development cannot be overstated. As emphasized by scholars and development practitioners (United Nations, 2015; Rakodi, 2018), informal settlements represent a critical frontier in the pursuit of sustainable and resilient cities. As the international community strives to leave no one

behind, this research seeks to shed light on pathways for inclusive urban development, ensuring that the most vulnerable and marginalized populations, often concentrated in informal settlements, are integral to achieving the SDGs by 2030.

The study aims to contribute to the discourse on urban development by exploring targeted strategies to uplift informal settlements, recognizing them as focal points for intervention in the broader urban landscape. The significance of this research lies in its potential to inform evidence-based policies and interventions, ultimately fostering more inclusive, resilient, and sustainable urban development practices in South Africa.

1.3 Motivation for selecting the three organizations.

The three organizations have a track record in implementing upgrading of informal settlements projects. These organizations are at different levels in terms of governance structures. There are some unique differences in that their mandates are different, and they deliver work according to the mandate. Regardless of the similarities and differences, all the organizations are key players in the urban development sector and there are opportunities for us to learn about the different measurements used in the upgrading of informal settlements.

The selection of **UN-Habitat** as a focal point in the study of urban development and informal settlements upgrading, particularly in the context of monitoring and evaluation, is underpinned by its prominent role as a global advocate for sustainable urbanization and a key factor in shaping international policies related to human settlements. As an agency mandated to promote inclusive and equitable urban development, UN-Habitat plays a pivotal role in formulating strategies and frameworks for upgrading informal settlements. The organization's extensive experience in working with diverse urban contexts provides a rich source of insights and practices that can inform the study. Additionally, UN-Habitat's commitment to the New Urban Agenda and the Sustainable Development Goals (SDGs), especially Goal 11 on sustainable cities and communities, underscores its relevance in shaping the discourse on effective monitoring and evaluation methodologies in the realm of urban development. By focusing on UN-Habitat, the study aims to leverage the organization's global perspective, best practices, and institutional expertise to

contribute to the advancement of knowledge and the refinement of strategies for upgrading and monitoring informal settlements on an international scale.

The decision to focus on the **Housing Development Agency (HDA)** in the study of urban development and informal settlements upgrading, particularly concerning monitoring and evaluation, is rooted in the agency's pivotal role as a key driver of housing initiatives and urban development in South Africa. As a governmental entity tasked with facilitating sustainable housing solutions, the HDA is instrumental in shaping policies and implementing strategies aimed at addressing the challenges posed by informal settlements. Its involvement in various urban development projects and informal settlements upgrading programs positions the HDA as a significant player in the field. The study seeks to draw insights from the HDA's experiences, methodologies, and approaches to monitoring and evaluating housing and urban development projects. By focusing on this agency, the research aims to contribute valuable knowledge that can inform effective strategies for upgrading informal settlements, aligning with national development goals and promoting inclusive, resilient, and sustainable urban environments in South Africa.

The choice of selecting City of Ekurhuleni municipality as the only municipality in this study in the context of urban development and informal settlements upgrading, with a specific focus on monitoring and evaluation, is substantiated by the municipality's significant role in the South African urban landscape. City of Ekurhuleni, as one of the country's largest metropolitan municipalities, grapples with the complex challenges posed by informal settlements within its jurisdiction, encompassing key industrial and residential areas. It is home to a growing population, a large proportion of which resides in informal settlements, making it a microcosm of broader national urban challenges. Given its socioeconomic diversity, rapid urbanization, and spatial fragmentation inherited from apartheid-era policies, Ekurhuleni provides a critical case for understanding how local governments can implement effective upgrading programs. Analyzing how informal settlements are being upgraded in Ekurhuleni is not only essential for improving the living conditions of its residents but also provides a broader understanding of the complexities of informal settlement upgrading in post-apartheid urban contexts, where historical inequalities and land access issues persist. The municipality's experiences in implementing

policies and initiatives aimed at upgrading informal settlements present a valuable case study. By carefully studying Ekurhuleni's strategies for monitoring and evaluating the impact of these interventions, the study aims to draw insights that can contribute to the broader discourse on effective urban development practices. Understanding the local context and the municipality's approaches to upgrading will not only enrich academic knowledge but also provide practical recommendations for policymakers and practitioners engaged in similar projects. The case study of Ekurhuleni also holds value in contributing to the body of knowledge on urban development in several ways. First, it offers insights into the successes and challenges faced by a local municipality attempting to balance rapid urbanization, housing demands, and social equity. By investigating the upgrading interventions and measuring the extent to which these upgrades have been achieved, the study will also provide empirical data on the effectiveness of multisectoral approaches to informal settlement improvement. Additionally, Ekurhuleni's focus on integrating spatial planning, service delivery, and socio-economic development within its informal settlements offers a critical examination of how municipalities can address the SDGs, specifically Goal 11, which focuses on sustainable cities and communities. The study also sheds light on the monitoring and evaluation frameworks utilized by the municipality, revealing strengths and gaps in current methodologies, which can inform both local policy and broader academic discussions about urban upgrading practices.

Moreover, this research is timely given South Africa's push toward achieving the 2030 Sustainable Development Goals and the pressing need for sustainable urban development strategies. Ekurhuleni's upgrading efforts, especially when evaluated in the context of effective measurement and monitoring, will offer important lessons for other municipalities in South Africa and beyond that are grappling with similar informal settlement challenges. By studying the tangible outcomes of the upgrading process and how progress is measured, this research will add to the growing body of urban development literature, particularly in the field of informal settlements and post-apartheid spatial transformation. The findings will contribute to the development of best practices for upgrading informal settlements in ways that promote inclusive and sustainable urban environments, not only for South Africa but for global urban development frameworks. The study thus underscores the importance of Ekurhuleni as a representative case

study that can offer nuanced perspectives on the complexities of urban development and the upgrading of informal settlements in the South African context.

1.4 Problem Statement

One of the Indicators of SDG 11.1 Sustainable cities and communities is to have 0% of the urban population living in informal settlements. In 2016 approximately 13.9% of urban households were reported to be living in informal settlements (Socio-Economic Rights Institute of South Africa (SERI), 2018), this means 1 in 7 households live in Informal Settlements and the number has been reported to be higher in Metropolitan areas, where it is 1 in 5 households (SERI, 2018).

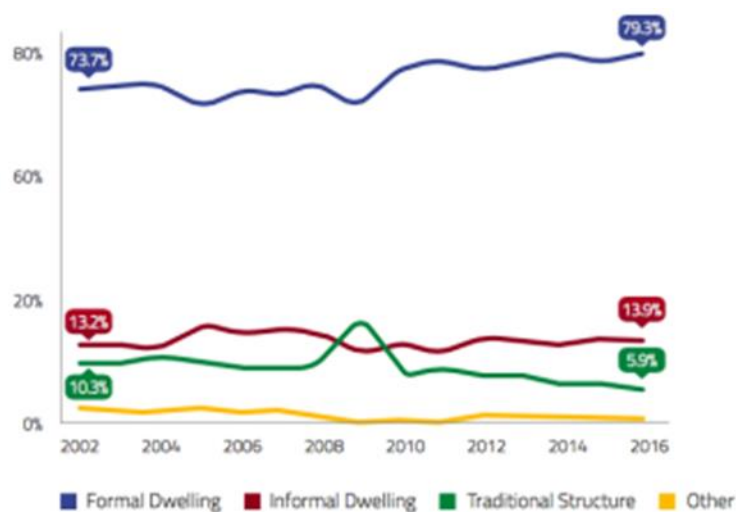


Figure 1: Percentage of households living in different dwelling types 2002 -2016. Source: SERI, 2018

The National Department of Human Settlements has invested millions of rand in implementing programmes like the Upgrading of Informal settlements programme that are meant to upgrade informal settlements to create sustainable cities. However, even with programmes such as the upgrading of informal settlements, the number of informal settlements keep on increasing, this does not indicate good progress towards having 0% of the urban population living in informal settlements by 2030. Most literature that exists with regards to informal settlements only refers to the extent of informal settlements, and how they should be managed or ways in which they can be managed, including policies and the socio-economic challenges of Informal settlements. However, very little has been written about informal settlements measurement and the

sustainable development goals, including the relationship between the reduction of informal settlements and sustainable cities and communities, and how this can be achieved by 2030.

The upgrading of informal settlements constitutes a pressing challenge in the global pursuit of sustainable urban development, particularly concerning the attainment of the 2030 Sustainable Development Goals (SDGs). While the international community recognizes the significance of upgrading informal settlements as a means to achieve SDG 11 on inclusive, safe, resilient, and sustainable cities, there exists a critical knowledge gap regarding the diverse measurement methodologies employed by different organizations in the upgrading process. This research fills the gap of the lack of a comprehensive understanding of the varied metrics, indicators, and evaluation frameworks used by multisectoral organizations engaged in informal settlements upgrading. The absence of a standardized approach to measurement impedes the assessment of the true impact of upgrading interventions, hindering the formulation of evidence-based policies conducive to sustainable urban development. This study aims to address this gap by scrutinizing and comparing the measurement practices of different organizations involved in informal settlements upgrading, thereby contributing valuable insights to inform targeted strategies and policies for achieving the 2030 SDG agenda.

1.5 Research aim/ purpose

This study, therefore, aims to determine how multisectoral organizations measure the upgrading of informal settlements, based on organizations that are implementing the upgrading of informal settlements projects. This study looked at a number of reports from UN-Habitat, Housing Development Agency and the City of Ekurhuleni and then interviewed people working for those organizations to get a broader picture of what they understand by the term informal settlements, what upgrading approach do they implore in their projects, as well as the measurement metrics/indicators and tools that they use to measure the upgrading of informal settlements. The hope is that this research will add to the existing knowledge in these areas and contribute to the efforts to use research to strengthen South Africa's urban development sector.

1.6 Research questions

This research responded to the main questions which are:

1. How is the Informal Settlements Upgrading Programme being measured by multi-sectoral organizations that are implementing the programme?
2. Is the measure consistent and coherent with the sustainable development goal 11?

These questions were responded to by first understanding the term and concept of informal settlements, and then unpacking the upgrading of informal settlements, then looking into the measurement metrics developed and the tools used by different organizations.

1.7 Research strategy

This study employed a qualitative research design to examine the efficacy of the Informal Settlements Upgrading Programme (UISP) as an urban planning agenda to address the number of households living in Informal settlements, Johannesburg and contributing to the Sustainable Development Goal 11: "Sustainable cities and communities" and how the upgrading of informal settlements is measured by the multisectoral organizations. A qualitative research design was more appropriate for this study as it allowed us to gain insight; explore the depth, richness, and complexity of the programme, a quantitative study will not have been sufficient and given us the opportunity to go in-depth and look at the different dynamics, as it is more concerned with quantities, amounts, testing relationships and examining cause an effect. A qualitative design has allowed us to answer the research question in depth, through the qualitative method of data collection (interviews and questionnaires), this way we had an opportunity to ask in-depth questions and probe more to understand how the programme can be or has been a measured, also looking into the SDG 11. The research questions that this research is seeking to answer can only be answered through texts and explanations, not numbers and percentages, therefore a qualitative study is more appropriate.

The study employed a purposive sampling method. The participants were selected based on a criterion, and those who met the criteria participated in the study. One of the criteria was that participants need to have been involved in a project or program that upgraded informal settlements one way or the other, to narrow it down, those that were involved were chosen on

their level of involvement, were they part of the project team? Decision makers? Data collectors or town planners.

Data was gathered through semi-structured interviews using an interview guide that contained a set of questions and topics to be covered. Data was also gathered through report reviews and literature reviews. The interview questions were aimed to ascertain the upgrading approaches used by different organizations and the measurement metrics and Indicators that are used to monitor and report on the upgrading process.

1.8 Summary of the research findings

The findings of this study are categorized into three main themes. Having undertaken this study, it was apparent that to understand how the upgrading of informal settlements is measured by the multisectoral organizations, we first need to have a holistic understanding of how organizations define informal settlements. This is the first inquiry that gave rise to the 1st theme which is about defining informal settlements. The second theme is just as important as theme 1. In understanding the definition of informal settlements, upgrading of the settlements became important from the definition, it became apparent that we need to understand the upgrading approaches that are employed by the organizations. This then introduced the third theme, which relates to the measurements used to measure the upgrading processes. Below is a summary of the findings.

1.8.1 Summary of findings for Theme 1: Defining Informal settlements

The literature review highlighted that, informal settlements are characterized by high unemployment rate, poor housing structures, lack adequate basic services and infrastructure. The settlements lack security of tenure and are often on land that is environmentally hazardous. These settlements are not suitable for human settlements, even though a few scholars saw them as a solution to the limited housing options. The literature review described that often people settle in these poor and unsustainable settlements due to the fact that they cannot afford other housing options that are close to their workplace, and these often offer the best solution to staying close as possible to work. Interviews revealed explicitly that indeed informal settlements are settlements that lack basic services, infrastructure and are associated with challenges such

as high pollution, high crime rate and high unemployment. The research found that the definition of informal settlements by literature and participants are consistent, there is a common understanding from different organization of what makes an informal settlement.

Most of the participants of the study are people that have been or are currently working within the urban development sector and specifically in the informal settlements space. A key finding from the interviews with participants is that informal settlements in South Africa are categorized into 4 categories; A, B1, B2 and C, this categorization helps with understanding the issues that need to be resolved and prioritizing them better. Another key finding which was quite interesting was that the land occupied by these settlements are not “informal” they are unauthorized hence there is no security of tenure for the occupants. These findings were particularly useful for this study because they do not only reflect findings from the literature review that informal settlements are characterized by many challenges which include lack of access to basic services, poor infrastructure, poor housing structures, insecurity of tenure, they also painted a picture of why these settlements need to be upgraded. A different perspective that came out of the interview is that a “slum” and “informal settlement” are two different things, a slum can be a household within a formal settlement that has challenges like informal settlement such as lack to basic services and poor housing structure, whereas an informal settlement is an entire settlement and not just one household within a formal settlement. This was an interesting finding because in some cases these terms are used interchangeably, that is why it was important to ask the definition and understanding of informal settlements.

A common understanding among organizations working on informal settlements is foundational for effective collaboration, streamlined efforts, and the formulation of comprehensive strategies. It contributes to a more coherent and integrated approach to addressing the complex challenges associated with informal settlements, ultimately leading to more impactful and sustainable outcomes for the communities involved.

1.8.2 Summary of findings for Theme 2: Upgrading of informal settlements

Findings from literature is that the upgrading of informal settlements is important, it is not only a matter of humanitarian concern but also a strategic imperative for creating more inclusive,

sustainable, and resilient cities. It addresses a range of interconnected issues, ranging from poverty and health to social inclusion and economic development, ultimately working towards the goal of creating livable and equitable urban environments. It is clear from literature that the process of upgrading of informal settlements can be undertaken in different ways. The scholars have identified successful two successful approaches to upgrading and transforming informal settlements. These are 1) externally designed comprehensive upgrading and 2) Support-based interventions. **Externally designed comprehensive upgrading** which pertains to interventions aimed at converting an unlawful and substandard environment into an acceptable standard through an intervention that involves substantial capital investment. Such interventions are usually initiated by external entities or governmental bodies (Huchzermeyer,1999). **Support-based interventions** – this approach distinguishes between government support-based intervention and NGO support-based interventions (Huchzermeyer,1999). The government interventions-based approach is described as an intervention that is community focused and allows the community to take the lead when it comes to planning and intervention. This approach often includes a community action planning and management approach, which see community members as the central part of the project and not just beneficiaries of the development (Lankatilleke, 1986). The two approaches described in literature distinguished between interventions implemented by government and those led by NGOs which both puts the community forward as the leads in terms of decision-making but supported by government or NGOs. The other interesting finding from literature, is that scholars have found that there are two distinct routes to how the upgrading approaches evolved. These are empirical and theoretical (Abbott, 2001). The **empirical route** is evidence based. An evaluation is conducted, and the main purpose of the evaluation is to identify strengths and weaknesses and determine appropriate and effective methods of implementation, based on the outcome and lessons learned, the programme is revised and implemented (Abbott, 2001). The second route to upgrading is the **theoretical route** which also works with real projects (Abbott, 2001). However, this route creates a theoretical construct as the project is being implemented and not after, the learnings from the projects are taken and then implemented in the following projects (Abbott, 2001). The two routes described in literature describes how upgrading projects can be

implemented, which can use lessons learned from other projects or create a theoretical construct as the project is being implemented.

The **empirical approach is response-oriented**, meaning it evolves as a reaction to the specific needs and challenges observed within informal settlements. Scholars who advocate for the empirical route argue that it results in policies and interventions that are more context-sensitive and responsive to local realities. Interventions that follow this approach tend to prioritize immediate needs—such as improving access to water, sanitation, and secure tenure—over long-term, idealized urban designs. This approach often supports in-situ upgrading, which respects the residents' social networks, livelihoods, and housing patterns, and seeks to integrate these settlements into the formal urban fabric without displacing the residents. In sum, it is a bottom-up process that adapts to specific conditions on the ground and evolves in response to the immediate context.

The **theoretical approach, on the other hand, is target-oriented** and tends to be driven by externally designed models and frameworks, often developed from idealized or normative planning theories. These interventions are typically implemented according to pre-determined targets, such as those outlined in urban master plans or national housing policies. This approach tends to focus on long-term urban development goals, such as formalization, infrastructure expansion, and improved housing standards, without necessarily adapting to the specific and nuanced conditions found within each informal settlement.

Findings from interviews with participants indicate that different organizations undertake the upgrading of informal settlements through the externally designed comprehensive approach. The government initiates and supports the projects with the involvement of the community members, even though in reality, community members are engaged but the final decision is taken by the project team. Participants emphasized the involvement of community members and explained that a process of community participation is undertaken to understand the community needs and challenges that they are faced with. This is usually done to prioritize resources and implement projects that will have an impact in the communities' lives. What was also an interesting finding from interviews with participants is that different organizations use the two

routes: empirical and theoretical when implementing projects. Participants indicated that when it comes to project planning, they consider lessons learned from other projects and as they are implementing the upgrading projects, they also document lessons learned from the current projects. It was quite interesting to find that there were similarities between what was found in literature review and what participants explained to be implementing in practice, the methods and approaches are used by the different organizations.

Participants also indicated that upgrading of informal settlements depends on the category of the informal settlements. This means, for informal settlements that are on environmentally hazardous piece of land, a process of relocation has to be implemented, and households need to be relocated to safe and habitable piece of land. And, for informal settlements that are on piece of land that can be developed, a process of sites and services is undertaken, this is where the area's basic services are upgraded so that they are adequate for everyone, the housing structures are built with better and durable material and infrastructure is also upgraded to ensure that the area is safe and economic activities can take place. The study found that there is consistency among the different organizations in how they upgrade informal settlements, all of the participants emphasized the importance of upgrading basic services and houses, and also making sure that the land is officially registered so that everyone can receive title deed for the piece of land that they occupy.

1.8.3 Measurement: Monitoring and evaluating the upgrading of Informal Settlements

The literature review has highlighted that monitoring and evaluation is a crucial aspect of good project management. We learnt from literature review that monitoring a project assist with data collection, keeping track of the progress and reporting on progress against target. Evaluation on the other hand is concerned with assessing the output/outcome of the project against the target and expected outcomes.

According to monitoring and evaluating the implementation of the upgrading projects is very important. Indicators and targets are agreed upon at the beginning of each financial year, this is to ensure that adequate monitoring, reporting and evaluation of the project take place. The findings from this theme are that monitoring, and evaluation is a cornerstone of a good and

successful upgrading project. All the respondents acknowledged the importance of monitoring and measuring said that, right from planning to implementation monitoring and measuring success and outcome of the project is important.

What came up from the interviews was the development of indicators to monitor and report against when it comes to the upgrading process. These indicators are unsurprisingly closely linked to what was been defined as lacking within the informal settlements and what the upgrading process intends to achieve. Participants explained that at the beginning of the year they work with the Monitoring and Evaluation team to define indicators and set targets to report against. These indicators are consistent across the different organizations. This finding is consistent with the RBM theory which has a key component of setting clear objectives and indicators. The use of indicators allows for the monitoring of performance throughout the implementation of a program or project.

Based on the findings from the interviews with participants, the tools used for monitoring and evaluation are similar across the different organization. It is evident from the interview engagements that digital transformation has taken over, even though it is slowly being adopted, there is consensus amongst the participants that there is value in using digital tools. These tools have been described by participants as being efficient and good resources that save time and resources. The tools are used to monitor informal settlements in terms of expansion and changes and the progress of upgrading. The most common tools that came up from the conversation is the Geographic Information Tools (ArcGIS, QGIS, google maps) and remote sensing tools such as drone technology. These tools have been used in different areas to collect data on informal settlements, show change detection and do informal settlements enumeration. The use of live dashboards and maps were mentioned by participants when asked about the reporting tools that they use. Some of the participants explained that within their organizations, they have developed their own informal settlements tracking dashboards that they use to report on the progress of upgrading and any changes happening on the ground.

The digital migration in monitoring and measurement of the upgrading of informal settlements came up in literature where there were examples of how other countries have adopted the GIS

tools to measure the extent to which informal settlements have been upgraded and monitoring the progress. Interviews confirmed that it is indeed the case in South Africa as well, different organizations are investing in technology to enhance efficiency in monitoring and reporting of informal settlements upgrading.

1.9 Chapters in this report

Chapter 2 of this study covers the literature review, this chapter is an integral part of the research process, and has contributed to the conceptualization, design, and execution of this study. It did not only inform me as a researcher but also provided a valuable resource for others interested in the same field of study. Chapter 3 is the methodology section which outlined the method that was undertaken to collect data, analyze it and report the findings. The methodology section has contributed to the reliability, validity, and overall quality of the research by providing a structured framework for conducting the investigation. Chapter 4 presents findings of the research, this section reports on the findings that came out of the literature review and interviews with participants and interpreted in response to the research questions. Chapter 5 is the discussion section; this section is a discussion of the analysis of results for each theme in relation to the literature review and the theoretical framework. The report ends with a conclusion and recommendations for future research within the urban development measurement space.

CHAPTER TWO: LITERATURE REVIEW

This chapter grounds this research based on literature about informal settlements upgrading measurements as well as the identified gaps in literature. For this study, relevant literature on informal settlements upgrading and measurement was reviewed, and its concepts were unpacked. The chapter starts off by unpacking the topic of informal settlements and why they are an issue to development, it goes as far as the last couple of decades. Starting with understanding the concept of informal settlements and its associated challenges was important because, without this understanding it would be nearly impossible to truly understand why upgrading informal settlements is important and how the upgrading is measured, and to ultimately make recommendations for future improvements. While this topic could be important in the M&E field, it is particularly important for the human settlements sector, particularly in South Africa where a lot of government resources have been invested into housing sector since 1994 when the Reconstruction and Development Programme was introduced. The focus on the informal settlement's definition will be on what scholars agree on and where they differ. The definition of informal settlements as the 1st point of this study is important because a common understanding of what we are referring to will set the tone moving forward and even with the interviews, the participants were asked to define informal settlements according to their own understanding. What follows from the definition of informal settlements, is the different approaches to upgrading of informal settlements. This part of approaches became very important after the initial reading of literature and the initial interviews with participants, through those, it was apparent that there are approaches to how upgrading of settlements are undertaken. This chapter concludes with a focus on measurement and tools and the gaps that have been identified in literature. This theoretical approach has been deemed adequate to respond to this study aim and questions. This approach also offered an opportunity to unpack the subject, key concepts and understand how different organizations understand and approach informal settlements upgrading. It also assisted with the decisions about which questions to ask participants and how to analyze the data coming from the reports and interviews. In the end the results of this study can be used by the human settlements sector to improve their approach and measurement of informal settlements upgrading.

1.2. Introduction

Any efforts in trying to understand the history of informal settlements upgrading and measurement, requires that one revisits the general history of urban spatial planning and labour migration especially in the context of South Africa. The one thing that is generally agreed upon by scholars is that informal settlements are a result of poor urban planning (Kita & Okyere, 2015). There is no doubt that informal settlements need to be upgraded to better settlements. Zooming into South Africa's spatial planning, there is no doubt that South Africa's spatial planning is a relic of colonization and the apartheid regime (Watson, 2009). In the historical context of international perspectives, spatial planning has traditionally focused predominantly on the interplay between diverse land uses and components of infrastructure and channels (Chapin 1985). Following World War II, a master planning approach dominated many regions across the globe. Nevertheless, it is widely recognized in academic discourse that the urban spatial planning in South Africa exhibits several inefficiencies. These include disparities in access to economic and social opportunities, inadequately situated lower-income settlements, insufficient public transport, and spatial structural attributes arising from policies and legislation implemented during the apartheid era. "South Africa's spatial planning is widely documented" (e.g. Swilling et al. 1991; Mabin 1992; Beavon 2004; Harrison et al. 2008; van Donk et al. 2008). In response to the evolving institutional landscape of spatial planning in South Africa, there is a recognized necessity for new approaches to planning, encompassing both general planning practices and spatial planning specifically. This acknowledgment is shared among academics, government officials, and planning practitioners. Serfontein and Oranje's (2008, p.28) evaluation of spatial planning in the Tshwane metropolitan area highlighted a pronounced disjunction between prevailing planning ideologies and the actual, emerging spatial dynamics of the 21st century. They attribute this disconnection, in part, to the enduring influence of urban planners interpreting and addressing space through a lens rooted in the nineteenth-century industrial city paradigm. Todes et al. (2010) contend that certain globally acknowledged principles guiding new urban planning are also important to spatial planning in South Africa. These principles include an increased emphasis on sustainability, enhanced integration and alignment between spatial planning and budgetary processes. The principles also include a more profound understanding of markets and their implications for formulating credible plans.

Studies that explore the concept of informal settlements and the linkage to spatial planning have long been conducted. Although the field of housing and human settlements has evolved over the years, there is still interest in measurement of upgrading informal settlements. The research ranges on several topics from sustainable human settlements, approaches to achieving sustainable human settlements and measurement indicators that are used to monitor the success or failure of upgraded settlements. These are all important questions given the impact of informal settlements on the people, the environment and the economy. As stated above, there is a need to upgrade informal settlements towards creating more inclusive and sustainable settlements that benefit the people and cities. The reality is that not all upgrading processes of informal settlements have been successful (Huchzermeyer, 2009). However, there are upgrading projects that have been successful, and the success of those projects have been attributed to a number of things that include understanding of spatial planning, holistic approach to upgrading and a number of important indicators of what makes a settlement more inclusive and sustainable.

In terms of the upgrading of informal settlements upgrading and measurements; the key debates among scholars are defining and understanding informal settlements, upgrading approaches to informal settlements and how these can be measured.

In terms of **defining and understanding of informal settlements** many scholars define informal settlements in terms of theory of precarity. **The theory of precarity** sheds light on the evolving nature of work and employment relationships in contemporary societies (Han, 2018). It underscores the challenges faced by individuals who experience insecurity and vulnerability in their economic and social lives, prompting discussions on the need for more inclusive and protective policies (Han, 2018). The key debates when it comes to theory of precarity are the socio-economic and political concept that describes the condition of individuals or groups living in a state of insecurity, vulnerability, and uncertainty regarding their employment, income, and overall livelihoods (Han, 2018). The most important thing to note when it comes to precarity is that it is associated with the lack of stable employment, inadequate social protections, and a sense of unpredictability in various aspects of life (Neilson, 2015). This study will use the theory of precarity to define informal settlements and the challenges that are associated with informal

settlements. The importance of using precarity to define informal settlements is so that we understand why these settlements are seen as unsustainable and given the name “informal”. This will lead us to understanding why upgrading of these informal settlements is important and shed light on the potential measurement indicators that should be considered when upgrading informal settlements based on the important livelihoods elements that could contribute to making these settlements more integrated and sustainable.

When it comes to understanding the concept of **upgrading of informal settlements**, the study will approach the upgrading of informal settlements from the **New Urbanism theory** which promotes the development of mixed-use, walkable neighborhoods with a focus on compact and well-designed urban spaces (Grant, 2005). The theory encourages the integration of housing, commercial activities, and green spaces to create vibrant and sustainable communities (Grant, 2005). The primary goal of New Urbanism is to create human-scale, mixed-use developments that promote a sense of community, environmental sustainability, and social interaction. The movement encompasses a set of design principles and planning strategies aimed at fostering more livable and inclusive urban environments (Grant, 2005). The study will be using this theory to understand what the upgrading intends to achieve, is the upgrading of informal settlements leading to better integrated neighborhoods and is the focus on well-designed urban spaces. The study will explore different upgrading approaches and understand how they fit into the new urbanism theory. Another theory that will help us understand the necessity of upgrading process is the incrementalism theory. **Incrementalism** is a theory in urban planning and policy that suggests that change in the built environment and public policy should occur gradually through small, incremental adjustments rather than through large-scale, comprehensive planning (Hayes, 2012). Through interviews and reviews of reports, the study will try to understand how different organizations undertake the upgrading of informal settlements. Are the approaches being used incremental and how do they prioritize what needs to be upgraded first and build on it incrementally? The incrementalism theory, as discussed by scholars like Lindblom and Simon (1979), advocates for a pragmatic, adaptive approach to decision-making in complex and uncertain environments. It emphasizes the value of small, manageable adjustments over time,

allowing planners and decision-makers to navigate the challenges of real-world urban development.

Because the study also focuses on the **measurement of informal settlements upgrading**. It is important to understand the concept key debates when of measurement. **The Results Based Management Theory** will help up to understand how measurement as a concept works. The study will then use the concept and understating to find out how different organizations measure the upgrading of informal settlements, what measurement mechanism have they put in place to ensure that the upgrading is measured and reported on adequately. Results-Based Management (RBM) is a theory and management approach that focuses on achieving outcomes and results in organizations, particularly in the public and non-profit sectors (Kuzek, 2010). The key debates when it comes to RBM include the focus on outcomes, clear objectives and indicators, performance monitoring, evaluation for learning, accountability and transparency and strategic alignment among others (Rundall & Walshe, 2009).

The theories are discussed above will provide a structured foundation that enhances the quality, relevance, and rigor of this research study. The theories have been used to help define and clarify the key concepts, variables, and relationships that this study is investigating. The frameworks discussed above will assist to place this study within a broader context by connecting it to existing knowledge and theories in the field. This contextualization will ensure that the research is relevant and contributes meaningfully to the academic or practical discourse.

1.3. Defining Informal Settlements

Since the study focused on informal settlements upgrading measurement, it was fitting to start by defining informal settlements or at least right at the beginning give an overview of how other scholars define or view informal settlements. This research, through literature review and interviews with participants, explored what the different people understand by the term “informal settlements”.

The categorizations from many scholars of what informal settlements are really focus on describing what they lack, and challenges associated with them. Very few offer a precise definition. Oni & Weimann (2006), describe informal settlements as settlements characterized

by poor housing structures, and a lack of basic services such as water, electricity, and adequate roads, they have been reported to have increased risks of diseases and ill health. This simple definition of informal settlements implies that the planning of such settlement was not well-thought out or there was no spatial planning at all. The mention of lack of services and infrastructure such as roads implies that there is no connectedness between social and spatial structures. The definition goes beyond just listing the lack of services and infrastructure but also describes the health risks associated with these areas. In the following section of this chapter, there is a detailed discussion on upgrading of these settlements and the different indicators that have been developed to measure progress to upgrading these settlements.

Another definition of informal settlements according to Huschzermeyer & Karam (2006), is that they are characterized by poor living conditions (both physical and non-physical), poor sanitation, and poor air quality which contribute to respiratory infections and increase the burden of acute chronic infectious conditions, this overview of informal settlements condition described by Huschzermeyer and Karam is consistent with that of Oni and Weimann (2019). Oni & Weimann (2019) added to the health issues described by Huschzermeyer and Karam and highlighted that over and above health and environmental issues, Informal settlements promote social exclusion and spatial marginalization, which contributes to increased risk of mental and overall well-being. This description of informal settlements links back to Edward Soja's socio-spatial framework theory which highlights the role of social relations in shaping the physical environment (Soja, 2010).

Fernandes (2011) describes the living conditions of informal settlements as lacking formal legal titles, the development planning of these areas is irregular and generally lacks essential services such as sanitation, roads, and clean water, he further explains that informal settlements commonly occur on environmentally vulnerable or public land. Fernandes' description of informal settlements and the living condition is consistent with that of Oni & Weimann (2019) and Huschzermeyer & Karam (2006). This definition introduced an additional challenge which is that of formal titles and touches on the planning aspects of informal settlements, which are defined as irregular. Fernandes' definition touches on the importance of spatial planning or how the lack thereof can result in poor and unsustainable areas.

The challenges that are faced by informal settlements are important to understand for this study because they form a foundation of why informal settlements need to be upgraded and how the successful upgrading of informal settlements can be measured. This background is also foundation to understanding the spatial planning if any, and infrastructure within these areas and how upgrading of such infrastructure can be undertaken or has been implemented in other area. The challenge of Informal settlements has been described to be more prevalent in developing countries. Fernandes (2011) researched informal settlements in Latin America and found that such developments are a result of unplanned cities, poor spatial planning which resulted in illegal occupation of land, and this is perpetuated by the exclusionary practices that are a result of historical economic discrimination and imbalances. The Government of Latin America (Brazil, Chile, Peru) has provided housing to many of the poor urban population, but the rate at which the informal settlements are growing in the area is so high that the government is unable to meet the growing demand. In Latin America and like many other countries that are struggling with the informal settlements challenge, Fernandes found that the occupants of informal settlements in occupy private, communal and public land without tenure. Occupants also begin by building structures that are not suitable for human settlements without any plan, and public services such as roads, power, water and sanitation are not available. Over time the settlements expand, and the appearance of public services starts to show, in some areas people start building houses with more durable materials replacing temporary structures and communities are formed.

[Examples of how informal settlements occurred and expanded in other regions.](#)

Dovey & King, (2011), found that there are many causes of the occurrence and expansion of Informal Settlements, these include urbanization, land-legal issues, poor city planning, and strict laws related to housing or inefficient housing policies among others. One of the examples that Dovey & King (2011), stated is that of the Russian outdated master plan which was prepared during the Soviet Union – era, and informed urban planning ultimately contributed to the occurrence of Informal Settlements in Russia. This occurrence of informal settlements in Russia is clearly linked to the poor urban planning during the Soviet Union era which has led to land legal issues.

Onyango & Tostensen, in their 2015 study referred to Kibera informal settlement in Nairobi which has a population of at least 1 million people as a good example of how poverty and urbanization have overwhelmed the government to a point where they cannot manage the population, and that has resulted in the Kibera informal settlement.

The Makoko Water informal settlement in Lagos, Nigeria lagoon is an example of how people end up settling in areas that are unsafe for human settlements, the settlement is located on a lagoon which is an environmental hazard and has a population that averages around 100 000 (Funsho et al., 2013).

The examples above give a clearer picture of what has been described as informal settlements by scholars. The studies conducted in different areas highlight the challenges that are faced by these areas which include overcrowding, unsafe environmental hazards, land legal issues and poor living conditions as a result of poor urban planning and urbanization.

It is clear therefore that most definitions on informal settlements define them with reference to their challenges and what they lack to become formal and sustainable. This is what led us to our discussion of upgrading of these settlements and indicators that are used to measure the successful upgrading of these settlements. There is clearly a need for informal settlements to be upgraded to sustainable and better planned areas. The next section focuses on the upgrading process.

1.4. Informal settlements upgrading approaches.

This section examines the comprehensive approaches that other scholars have discussed when it comes to the holistic physical transformation of informal settlements. The scholars have identified successful two successful approaches to upgrading and transforming informal settlements. Other approaches can fall into these two but for the purpose of this report, the two listed below have been studied by (Huchzermeyer,1999). These are 1) externally designed comprehensive upgrading and 2) Support-based interventions.

Externally designed comprehensive upgrading: The initial category, by Huchzermeyer, pertains to interventions aimed at converting an unlawful and substandard environment into an acceptable standard through an intervention that involves substantial capital investment. Such

interventions are usually initiated by external entities or governmental bodies (Huchzermeyer,1999). An example of externally designed comprehensive upgrading is that of the Comprehensive Improvement Programme of slums in Madras, India, initiated in 1977 by the World Bank. The objectives of the project was to; (i)further develop and expand low cost solutions to urban problems in Madras, initiated under the first Madras Urban Development Project, particularly in the housing sector; (ii) to support the re-orientation of shelter and infrastructure investments and programs in the Madras Metropolitan Area to be more responsive to the needs of the urban poor; (iii) to expand the capacity of the institutions providing shelter, infrastructure and transport; (iv) to ensure replicability of project approaches by continuing full cost recovery in informal settlements improvement and other sectors; (v) to support more effective metropolitan planning and capital programming and budgeting (World bank, 1990).

The project in Madras was implemented by the government, and it experienced major challenges; which included extending it by three years from 5-years initially planned for to 8-years due to; securing land for sites and services, sluggish allocation of public sector land for the sites and services scheme, and protracted land acquisition for the Ring Road, further exacerbated by suboptimal construction management. The relocation of community members posed a serious obstacle, impeding progress on the storm drainage component of the project (World Bank, 1990). However, the project achieved some of its objectives and these were mainly the physical and financial objective. Other positive outcomes from the project included the impact that it had on the sector, it was reported that there was an improved positive attitude towards upgrading of sites and services of informal settlements, the project also strengthen stakeholder relations and engagement. One of the major lessons learned from the project is the project performance monitoring and implementation and how it can be strengthened and made more efficient by closer programming of the financial and operating programs of implementing agencies.

The externally designed comprehensive upgrading approach is focused on the spatial planning and the existence of infrastructure when it comes to upgrading informal settlements. The Madras upgrading project highlighted above gives a good picture of how the comprehensive approach of upgrading is implemented and the challenges associated with this approach. This approach

focuses on correcting the challenges of lack of services, infrastructure and housing within the informal settlements which have been highlighted as major issues that people are having.

Support-based interventions – this approach distinguishes between government support-based intervention and NGO support-based interventions (Huchzermeyer, 1999). The government interventions-based approach is described as an intervention that is community focused and allows the community to take the lead when it comes to planning and intervention. This approach often includes a community action planning and management approach, which see community members as the central part of the project and not just beneficiaries of the development (Lankatilleke, 1986). The government support project is exactly what it describes when it comes to upgrading, the government supports the community in their decision, this could be financially or governance issues, but the main lead in the planning and implementation of the upgrading lies with the community (Lankatilleke, 1986). Huchzermeyer (1999), highlights the many important elements that have led to the success of this approach but the main one is the strong commitment to working with the community and letting them take the lead. The NGO- driven support-based approach interventions are primarily driven by NGOs supporting communities to lead and implement programmes. The central principle of the NGO driven support is “trust in the ability of the poor, with the aim of increasing options for them so that they become independent instead of providing for them and continuing the cycle of dependence” (Huchzermeyer, 1999, p.66). The NGO based support is regarded as the most appropriate mechanism for upgrading, even though there are several flaws associated with it. Some of the flaws that have been outlined in literature when it comes to this approach; Firstly, It is situated within an empirical framework, and this then leaves it open to criticism because success is viewed subjectively. Secondly, it has been reported to be ideological. Third, the issue of principles is highlighted, scholars believe that policies underpin development; they are not the drivers of the development. Support based intervention approach advocates for the inclusion of communities in the upgrading process. The exclusion of communities in development projects are seen to be unsustainable and inefficient. In addition, critique of the responsive approach to the Upgrading of Informal Settlements Programme (UISP) through intermediary NGOs suggests that, despite the strengths of NGOs

being empirical, responsive, and supportive, there are inherent flaws in how these roles are executed within the framework of UISP.

The main issue lies in the structural constraints that affect the NGOs' ability to drive meaningful change. NGOs are often seen as effective due to their grassroots involvement and their ability to respond flexibly to community needs. However, in the context of UISP, their role may be limited due to several factors:

Bureaucratic Oversight and Policy Misalignment: Despite the responsiveness and adaptability of NGOs, their initiatives must still align with the broader policy frameworks of the state or local government. This leads to tensions between the bottom-up approach favored by NGOs and the top-down mandates of governmental agencies, which can cause delays and inefficiencies. For example, NGOs may propose empirical, community-based interventions that address immediate needs, but they may not fit within the rigid, target-oriented planning of urban policies that prioritize long-term urban development goals.

Inconsistent Funding and Resource Limitations: NGOs are often dependent on external funding, and the short-term, project-based nature of this funding can limit their ability to enact sustainable, long-term changes in informal settlements. While NGOs can quickly respond to the urgent needs of a community, the lack of consistent resources may lead to incomplete or unsustainable upgrades.

Power Dynamics and State Interference: NGOs' empirical and supportive roles might be compromised by power dynamics where they function as intermediaries between the state and the communities. When intermediary NGOs implement state-driven programs like the UISP, they sometimes find themselves having to balance state interests and community needs, often leading to compromises that dilute their responsiveness. Scholars argue that while NGOs are community-based, state-driven upgrading programs are often not sufficiently participatory, and this affects the authenticity and depth of the NGO's responsiveness.

In conclusion, while the idiosyncratic features of NGOs—being responsive, empirical, and supportive—are valuable in informal settlement upgrading, their role in the UISP is perceived as flawed because of systemic limitations, resource dependencies, and policy misalignment, which

restrict their ability to drive sustainable, large-scale transformations. The critique emphasizes the need for a more integrated, collaborative approach between NGOs and governmental agencies, ensuring that community needs are met while aligning with broader urban development objectives.

Thematic approaches to informal settlements upgrading.

From literature, there are two distinct routes to how the upgrading approaches evolved. These are empirical and theoretical (Abbott, 2001). **The empirical route** is evidence based. An evaluation is conducted, and the main purpose of the evaluation is to identify strengths and weaknesses and determine appropriate and effective methods of implementation, based on the outcome and lessons learned, the programme is revised and implemented (Abbott, 2001). This approach is strongly rooted in evaluation and evidence based; mid-term evaluation results are used to inform the upgrading project moving forward. The UNCHS (Habitat) use this evidence – based approach as best practice for any upgrading programme (Abbott, 2001). The sustainability of the empirical route has been argued by scholars as being “unsustainable” because it lacks a coherent framework that explains the process underpinning it (Abbott, 2001). This approach is more retrospective than pro-active, you can only learn from your mistake after you have implemented the programme. The good thing though, is that there is an opportunity to rectify the mistakes. Choguill, Franceys, & Cotton (1993, 1994), have studied two areas where this approach was implemented effectively, documented the results and translated into a coherent and logical process. The two upgrading areas where empirical route has been implemented effectively is the infrastructure provision through progressive improvement model and the community-based planning with supportive framework or community action planning (Hamdi & Goethert, 1996). The second route to upgrading is the **theoretical route** which also works with real projects (Abbott, 2001). However, this route creates a theoretical construct as the project is being implemented and not after, the learnings from the projects are taken and then implemented in the following projects (Abbott, 2001). The theoretical route is also retrospective because evaluations are conducted post project implementation, and the findings and learnings are implemented in future projects. One study that has clearly demonstrated the merits of this approach is the holistic planning approach (plano global).

Different approaches

1. Progressive improvement model of infrastructure provision
2. Microplanning or community action planning
3. Construction of a holistic plan (plano global).

Progressive improvement model of infrastructure provision

There is no argument that the physical difference between an informal settlement and a formalized area is the physical infrastructure. Physical infrastructure is an integral part of a sustainable human settlements (Abbott, 2001). However, even with physical infrastructure there are many services that fall under infrastructure, therefore it is important to be specific on the infrastructure services to be outlined in the planning phase. Presently, there are many approaches to infrastructure upgrading that exists. Choguill et al. (1993, 1994) argue that in low-income household communities, infrastructure is left to be planned, built, upgraded and managed by the community. Therefore, the view led to the growing support of “progressive improvement model”, this is a model whereby infrastructure provision is implemented progressively from basic level, to intermediate and then full conventional infrastructure. The progressive improvement model by Choguill has been compared to the progressive housing improvement first proposed by Turner in the early 1960s and 1970s. Both models are based on the physical infrastructure being the primary element of settlement upgrading, this is seen as the core element in the upgrading process (Abbott, 2001). This approach also has a strong community focused inclusion in the planning and implementation of the infrastructure upgrading projects within informal settlements.

Microplanning or community action planning

This is a project linked methodology that was 1st implemented by Sri Lanka million houses programme (Lankatilleke, 1990). This planning method is closely linked to project management cycle stages where there is initiation, planning, design, implementation and maintenance. Many authors including Hamdi and Goethe (1996) argue that the planning stage is the most important stage. Planning stage is where stakeholders meet and make decisions about the project, this is

stage usually includes community members and often referred to as community participation. Community participation forms the anchor of upgrading, this is usually done to get community views and buy-in on how upgrading will take place, and which areas are to be prioritized for upgrading. The study will look at how different organizations include planning and community participation in their upgrading of informal settlements process, is there consistency in how communities are engaged across different organizations, is there a tool that is being used? And how is planning and community participation viewed by the organizations? Do they form an integral part of the process? And at the end when measurement is conducted, is this an important part that is considered according to the extent to which the community was engaged, and the plans were followed? All these questions will seek to answer the main research question of whether the measurements used by multisectoral organizations in upgrading informal settlements are consistent and coherent.

Physical transformation through the holistic plan (Plano global)

This approach to upgrading is based on the extensive use of Geographic Information Systems (GIS) and remote sensing for data capturing, developing a data management system and creating settlement layout plans (Abbott, 2001). The physical representation of the settlement allows for different interventions to be considered based on the layout plans, this can include having social amenities, schools, transport infrastructure and shopping centres amongst other things. This process is underpinned by the zoning law; this law specifies the type of land use allowed on a specific area (Abbott, 2001). The Plano global is more integrated planning, it attempts to upgrade to the full extent and not just focus on one aspect but, looks at the upgrading process holistically to create integrated human settlements.

Based on the different routes and approaches to informal settlements upgrading, it is clear that assessing how multisectoral organizations upgrade and measure informal settlements requires a broader understanding of informal settlements and the upgrading approaches. If organizations understood the different types of approaches and routes to upgrading then they may combine the routes and approaches to enhance effectiveness and efficiency of the projects Evidence use is quite common when it comes to the upgrading process, this is encouraging because it means

there are cases that have been proven to work effectively adopting specific processes that worked well in other projects.

Understanding stakeholders' upgrading approach was key to this study. The respondents were asked questions relating to how they undertake informal settlements upgrading projects to get a sense of the common approaches and routes are being implemented.

Publications from Human Settlements, Mark Misselhorn, and the Project Preparation Trust (PPT) (Misselhorn, 2017) emphasize an incremental, participatory, and in-situ approach to upgrading informal settlements. These approaches focus on partnerships between government, NGOs, and communities, advocating for solutions that address tenure security, infrastructure development, and improved services. Misselhorn and PPT highlight the need for policy frameworks like the National Upgrading Support Programme (NUSP) and tools that facilitate city-wide scaling of upgrades, ensuring integration across sectors.

Recent literature on informal settlement upgrading emphasizes the importance of addressing this issue in situ, particularly as urban populations grow and inequalities persist. Scholars such as Marais et al. (2013) have explored the complexities of upgrading informal settlements in South Africa, highlighting the need for sustained, participatory approaches that engage local communities in the planning and execution process. In their longitudinal study, they observed that upgrading projects often lead to improvements in housing and services, but challenges remain in achieving long-term sustainability and full integration into formal urban frameworks. Another significant body of research highlights the importance of addressing informal settlements in situ, rather than relocating residents, as this often maintains social networks and livelihoods. For instance, Matovu (2000) argues that upgrading existing settlements can foster more inclusive urban development policies, addressing the structural causes of informal housing, rather than simply the symptoms. This approach is consistent with sustainable development goals (SDGs), particularly SDG 11, which focuses on making cities inclusive, safe, resilient, and sustainable. Moreover, in regions such as Egypt, Khalifa (2015) has documented the shift from neglect to participatory development strategies, which include engaging communities in the upgrading process to ensure their specific needs are met. This participatory approach has been

echoed by other scholars across various regions, emphasizing that resident involvement is key to the success of upgrading projects. The combination of case studies from different countries illustrates the global relevance of in-situ upgrading of informal settlements. By focusing on tailored, localized interventions, cities can better manage urban growth while improving the living conditions of some of the most vulnerable populations.

The reference "Cloete, F., Rabie, B., & de Coning, C. (Eds.). (2014). *Evaluation Management in South Africa and Africa*" provides an in-depth exploration of the field of evaluation management, specifically within the South African and broader African contexts. This edited volume presents various perspectives on how evaluation practices and systems are developing across different sectors in these regions, emphasizing the role of monitoring and evaluation (M&E) in public policy and governance.

The book underscores that evaluation management in South Africa and Africa has evolved significantly over the past few decades, driven by the need to improve public service delivery, accountability, and the effective use of resources. South Africa, in particular, has made strides in institutionalizing M&E frameworks within its government structures, supported by legislative and policy frameworks that require regular performance assessments of public programs. The National Evaluation Policy Framework (NEPF) in South Africa is highlighted as a key initiative in this regard.

In the broader African context, the book discusses the challenges facing evaluation management, such as limited capacity, financial constraints, and the difficulty of creating contextually relevant M&E systems. It also points to the growing recognition of the importance of culturally appropriate evaluation practices that consider local knowledge systems and socio-economic realities.

In summary, *Evaluation Management in South Africa and Africa* contributes to the body of knowledge on how evaluation practices are being integrated into governance and policy management across the region, while also identifying the obstacles and opportunities for

building more robust evaluation cultures in Africa. This is vital for improving transparency, accountability, and the overall effectiveness of governance in Africa.

Understanding stakeholders' upgrading approach was also key to this study. The respondents were asked questions relating to how they undertake informal settlements upgrading projects to get a sense of the common approaches and routes are being implemented.

Comparison: Supportive vs. Externally Designed, Response-Oriented vs. Target-Oriented

The empirical (supportive) approach is characterized by its flexibility and adaptability to local conditions. It is reactive and focuses on improving the immediate quality of life of informal settlement residents through in-situ interventions, without necessarily adhering to external formalization goals. This approach values the local context and knowledge, ensuring that the upgrading process is participatory and rooted in the realities of the community.

Conversely, the theoretical (externally designed) approach is often rigid in its implementation, adhering to urban planning standards that may not fully account for the informal and dynamic nature of these settlements. This approach may aim for rapid transformation towards formal urban standards, which can sometimes lead to displacement or the disruption of existing social networks within the community. By being target-oriented, the theoretical approach often overlooks the specific socio-economic conditions and spatial practices within informal settlements.

Relevance to Informal Settlement Upgrading

In the context of informal settlement upgrading, it is important to balance these two approaches. The empirical route provides the necessary flexibility and responsiveness to local needs, while the theoretical route ensures that interventions are aligned with broader urban development goals and national or global frameworks. Abbott (2001) emphasizes that finding a middle ground between these two approaches can lead to more sustainable and inclusive upgrading processes,

where both the immediate needs of informal settlement residents and long-term urban development objectives are met.

By integrating empirical, context-sensitive practices with theoretically grounded, target-oriented frameworks, upgrading initiatives can effectively bridge the gap between the needs of informal settlement communities and the formal requirements of urban development. This balance is critical in ensuring that upgrading projects are not only technically sound but also socially and economically viable for the residents they are meant to serve.

1.5. Measurement: monitoring and evaluating the upgrading of Informal Settlements

Before exploring the various systems and approaches organizations use to monitor the progress of informal settlement upgrades and evaluate their outcomes, it is essential to first understand the concept of monitoring and evaluation. This foundational understanding provides the necessary context for assessing the effectiveness of these processes and their contribution to development objectives. Without this conceptual grounding, it is challenging to critically analyze the successes or challenges faced in upgrading initiatives.

Earlier in this section, I described informal settlements, and the challenges associated with them. In the section that follow, we looked at the upgrading approaches and routes that have been studied by other scholars and implemented in other projects to upgrade informal settlements as a means of dealing with the challenges. Research has shown that not all upgrading projects have been successful, therefore one way to understanding this, is to understand how organizations measure the upgrading of informal settlements, and if there are M&E systems that have been put in place to collect data and report on the projects. The section before this one focused on approaches, and the approaches all had a foundation of evaluation to them, whether they fall under the theoretical or empirical route, there is a strong emphasis on M&E.

Scholars describe monitoring as the systematic approach to tracking and reporting on progress or performance of a project or programme over its life cycle (Bryce & Crawford, 2003). While evaluation is described as the periodic review of performance with the purpose of reflecting on the implementation and results, and documenting lessons learned (Arevalo, 1998).

The systematic approach of tracking is mainly in monitoring, and it is meant to keep track of what is happening within a programme or project and for most to closely gather the data throughout to report on progress and the implementation of the intervention. This definition of monitoring implies that data can be collected systematically, and the frequency of collection is then determined by the stakeholders involved who have interest in the project. Therefore, data can be gathered daily, weekly, monthly, quarterly or annually depending on the use and the type of intervention that is monitored and the use of the monitoring data.

The term M&E was only socialized in the 1970s when Turner promoted the notion of measuring progress throughout the lifecycle of a project instead of simply just trying to understand what went wrong or what went right at the end (Crawford & Bryce, 2003). This introduced the concept of indicators with targets that could be monitored periodically. The data collected from monitoring activities is usually used to determine effectiveness and efficiency of the programme and identify issues that may be arising as implementation continues.

It is interesting to find from many literature sources that data has become a very expensive commodity and there is very little investment that goes towards data collection. As a result, many organizations have had to find different ways of collecting data and reporting on projects. The Housing Development Agency (2009) uses Geographic Information Systems based tool called remote sensing to monitor the expansion of current informal settlements across the country with a technique called change detection, this technique shows the change in land-use on a map. Change detection monitors changes in land-use using or expansion on a satellite image or spatial data, in the case of informal settlements, change detection can show whether a settlement has grown over time or decreased based on the size of the area. According to Mazeka (2015), the use of spatial data has long been adopted in the spectrum of informal settlements upgrading. Brazil was the 1st country to adopt the use of GIS and remote sensing to monitor and evaluate the extent to which settlements have been upgraded, this technique was then integrated into the urban fabric and formed part of their planning process (Abbott, 2003). Falcon et al., 2019; Tijia & Coetzee (2022), in their informal settlements study noted the recently increased attention in the use of maps and digital technology sources to better understand informal settlements development and characteristics including monitoring and evaluating the spatial characteristics,

this is consistent to what Mazeka noted in his 2015 study of the use of GIS in monitoring and evaluating the progress of in-situ upgrading of informal settlements. Hoffman et al., (2015) discussed the value of the use of remote sensing and aerial imagery aerial analysis for producing maps and spatial information about informal settlements without having to spend resources being on the ground and collecting data in-situ. Some of the benefits that are noted in the study include the use of aerial images to get a synopsis of the geographic positioning and layout of informal settlements, estimation of population and socio-economic attributes of the infrastructure and environmental features of the settlements these would answer the question of the “where, what and when” of settlements upgrading and consideration policymaking, this supports evidenced based decision making (Liu et al., 2019). However, even with the introduction of advanced technological tools that are used to measure the increase or decrease of informal settlements, there are many challenges that are faced when it comes to the measurement, and the main challenge that has been highlighted in many literatures is that of data availability, specifically the most recent spatial data or aerial images. Kufer et al., (2016) revealed the limited attention paid to the “when” of remote sensing-based informal settlements mapping with only a marginal number focusing on and examining the spatiotemporal dynamic such as growth and decline over time. In one part this could be attributed to the understanding of the technological advances of big data and computation, another part is also financial resources that need to be invested in the acquisition of data and softwares to analyze the data which most government departments cannot afford, this becomes a barrier to timely monitoring and evaluating the spatial and temporal dimensions of the upgrading process.

Cinnamon & North (2023) in their spatiotemporal developments of informal settlements in Cape Town, used spatial data and satellite images to identify and track the development and growth of informal settlements over a period (2000 – 2020) in Cape Town. A remote sensing-based analysis to identify informal settlement’s locations and their temporal changes. The study was undertaken using methodological process; 1) The direction of the informal settlements, 2) Land cover classification and 3) temporal change detection. The steps involved identifying location and spatial distribution of the settlements, then conducting land cover classification to measure built-up areas and then finally conducted a time-series temporal change analysis over time to reveal

periods of growth and decline in proportion to the built-up area within several informal settlements in Cape Town (Cinnamon & Noth, 2023). The results revealed a growth in informal settlements built-up area over a period of 20 years, the image below shows built-up areas and non- built-up areas in 2000 vs built-up and non- built-up areas in 2020, it is clear that more buildings have been erected over a period of 20-years which translates to the growth of informal settlements, the buildings that have been mapped are residential buildings.

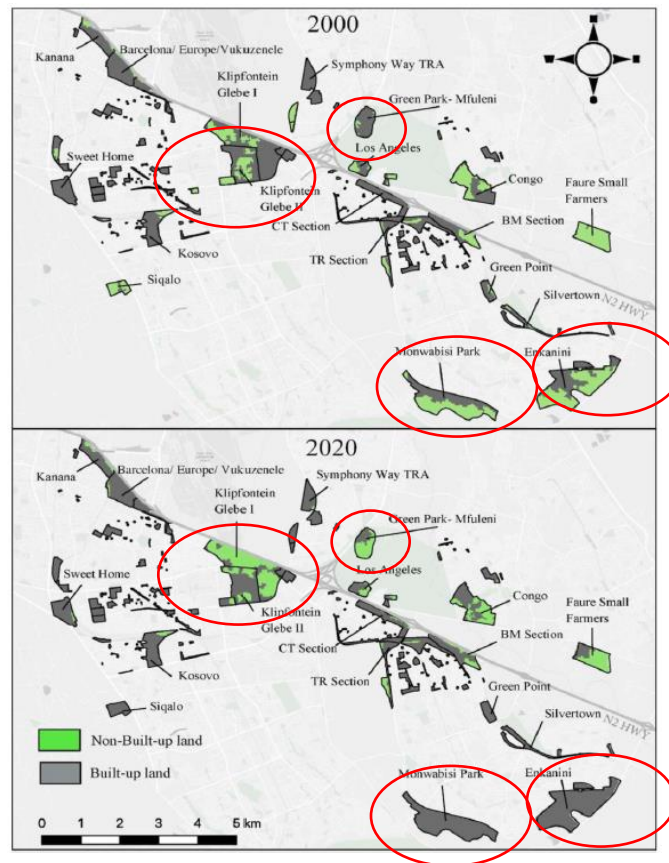


Figure 2: Land cover classification of informal settlements into built-up and non-built-up land 2000 and 2020. Cape Town, South Africa. Source: Cinnamon & Noth, 2023

Looking at the image above, it is clear to see the power of remote sensing and image analysis as a tool for monitoring and evaluating or measuring the growth or decrease of informal settlements over time. The technique of remote sensing can also be used to identify services such as power lines, roads and water and sanitation. The areas circled in red above shows the land cover non-built-up areas and built-up areas. When you look at the image at the top taken in 2000, you will see that most areas were green which represents nature and non-built up, the same areas in

2020, which is 20 years later is covered in built up structures. This is a good representation of monitoring or collecting data on an area using spatial data and a technique called remote sensing. Data can be collected from a distance without being in direct contact with the object/subject. The image shows the expansion of built-up areas over time and the change in land cover. This type of data is important for decision making. By capturing large-scale and high-resolution imagery, remote sensing allows for more accurate measurement of improvements, offering insights into whether upgrading efforts are successful in enhancing living conditions and meeting developmental goals.

Abbott (2001) in his study of “An analysis of informal settlement upgrading and critique of existing methodological approaches” reviewed different approaches to upgrading informal settlements, these approaches include 1) Improvement of physical infrastructure, 2) community planning and 3) physical transformation to evaluate successful upgrading projects. Abbott found that many countries within Latin and Central America have adopted technologically driven solutions to upgrading, and this solution is GIS and remote sensing to evaluate the extent to which settlements have been upgraded (Abbott, 2001). The method of GIS and remote sensing allowed decision makers to define the complex spatial patterns of shacks on a map and to demarcate shacks and boundaries for upgrading and land regularization (Abbott, 2001). The study has demonstrated how many 1st world countries have adopted technology to evaluate upgrading of informal settlements and argues that the invention of aerial photography and remote sensing has been a game changer to how governments and other sectors operate.

Monitoring and evaluating the informal settlements are not only about collecting any type of data on these settlements, since we have already discussed that data collection is one of the most expensive activities. According to literature, there are several indicators that have been developed to indicate the progress on achieving upgraded and sustainable areas. These indicators have been developed by the UN- Habitat and implemented by the different countries. The indicators include percentage of urban population living in informal settlements and a target of 0% by 2030 (SDG, dashboard). To track how each country is performing against this target, data on the % of people living in informal settlements is collected annually and reported on. The other indicators include access to infrastructure (transport, sanitation etc) and access to basic

services (water, electricity) with the target of 100% of the urban population having access to basic services and infrastructure. This data is then used to understand challenges that countries are facing in upgrading informal settlements and employ different mechanisms to assist the countries that are struggling.

The different data collection tools and indicators discussed above were key to this study. Participants from different organizations were asked about the indicators that they use to measure and monitor the progress on informal settlements, together with the tools that they use to collect data and report on progress.

The different organization: UN-Habitat, the Housing Development Agency (HDA), and the City of Ekurhuleni use varied measurement tools for upgrading informal settlements, reflecting their organizational focus, mandates, and approaches to urban development.

1. UN-Habitat:

UN-Habitat uses a comprehensive framework called the **Participatory Slum Upgrading Programme (PSUP)**, which employs a variety of measurement tools to evaluate informal settlement upgrades:

- **Sustainable Development Goal Indicators:** Specifically, UN-Habitat tracks indicators like SDG 11.1, which focuses on ensuring access to adequate, safe, and affordable housing and basic services by upgrading slums.
- **City Prosperity Index (CPI):** A multi-dimensional index used to assess cities' performance across various aspects including infrastructure, governance, equity, and quality of life in informal settlements.
- **Participatory Data Collection Tools:** UN-Habitat emphasizes participatory approaches, using **community mapping**, **household surveys**, and **focus group discussions** to assess informal settlements' needs and progress in upgrading.
- **Slum Almanac:** This global monitoring report uses GIS (Geographic Information Systems) data to map slum settlements and monitor progress over time.

- **Baseline and Impact Assessment Tools:** UN-Habitat conducts **baseline studies** before interventions and **impact assessments** post-intervention to measure the effectiveness of upgrading projects.

2. Housing Development Agency (HDA):

The HDA in South Africa works primarily on facilitating housing development and upgrading informal settlements through:

- **Spatial Targeting and Monitoring Tools:** The HDA uses the **National Upgrading Support Programme (NUSP)** framework to monitor informal settlement upgrades, focusing on integrating housing projects into broader urban development strategies.
- **GIS and Spatial Data:** The HDA integrates GIS tools to map informal settlements and track progress, allowing for spatial monitoring of housing development, service delivery, and land acquisition.
- **Community-Based Monitoring:** In collaboration with local municipalities, the HDA often engages in **community surveys** and **participatory planning** to gather data on informal settlement conditions and upgrade needs.
- **Progress and Performance Indicators:** HDA measures success through indicators related to land acquisition, provision of basic services (water, sanitation), and the formalization of informal settlements.

3. City of Ekurhuleni Municipality:

The City of Ekurhuleni, as a major South African municipality, adopts a more localized and policy-driven approach:

- **Integrated Development Plan (IDP) Monitoring**:** Ekurhuleni Municipality aligns its informal settlement upgrading programs with its **IDP**, which sets performance targets across service delivery sectors such as housing, sanitation, and infrastructure.

- **Service Delivery and Budget Implementation Plans (SDBIP):** These are critical in monitoring the **municipality's budgetary allocations** toward informal settlement upgrading and the execution of these plans within a given fiscal year.
- **Geographic Information Systems (GIS):** Like other urban centers, Ekurhuleni utilizes **GIS-based tools** to track the distribution of services in informal settlements, infrastructure development, and housing formalization efforts.
- **Housing and Service Delivery Targets:** The municipality sets specific housing and service delivery targets within its **Upgrading of Informal Settlements Programme (UISP)**, which is aligned with national housing policies.
- **Community Participation Mechanisms:** The municipality also engages in participatory governance mechanisms, using **community feedback** and **local development forums** to monitor and assess the needs and progress of upgrading projects.

Conclusion:

Each organization employs distinct measurement tools that align with their roles and mandates. UN-Habitat adopts a global framework focused on SDG monitoring and participatory tools; the HDA uses spatial targeting, GIS, and community-based monitoring for localized development; and the City of Ekurhuleni relies on integrated municipal.

1.6. Gap identified in literature.

Although there is extensive literature on urban development, this review focuses on understanding the upgrading of informal settlements. It also explores the frameworks and tools used to measure the effectiveness of these upgrading initiatives, providing a foundation for evaluating progress in improving living conditions within such settlements. There are gaps relating to digital transformation within the urban development sector. Very little is reported on the recent use of technology, literature is still reporting on the old and traditional ways of measuring and working within the space of urban development. The new technologies that have been reported on in this study need to be documented more with specific examples, this would contribute a lot to literature.

CHAPTER THREE: METHODOLOGY

3.1 Methodology

To achieve the aim of the research and answer the research questions, data will need to be collected from participants and documents. This section outlines how the data has been collected, the type of data collected, and how has been stored, analyzed and reported on.

3.2 Structure

This chapter is structured as follows:

The section begins by outlining the research strategy, which serves as a blueprint for the collection, measurement, and analysis of the gathered data, incorporating the philosophical assumptions underpinning the study. Following this is the discussion on research design, which details the plan for the project and offers the framework guiding the methodology. A timeline is then provided, specifying the duration of the research and its components. Finally, the sampling and data collection methods are explained, including the selection process for the study population.

The data collection section, which is the key point of this research, explains how data has been collected from different sources, and the data collection instruments used that to collect or generate data to draw conclusions on the research question and respond to the aim of the research. The data collection section is followed by the data analysis section which explains how the data is analyzed, the different strategies that have been used to analyze data so that it is meaningful, and results can be drawn from it.

Ethical considerations outline the primary considerations that have been employed when undertaking the research and collecting data, this part includes self-declaration, assurance not to harm participants and consent. The following sections are the study limitation, which outlines the potential limitations to the study, then my positionality in the research as a researcher, the feasibility of the research is also outlined, and the last section is the reliability and validity of the results and how they have been applied concludes the methodology section.

3.3 Research Strategy

This study has employed a qualitative research design to examine how multisectoral organizations measure Informal Settlements Upgrading Programme (UISP) as an urban planning agenda to address the number of households living in informal settlements, Johannesburg and contributing to the Sustainable Development Goal 11: "Sustainable cities and communities". A qualitative research design was deemed appropriate for this study as it allows us to gain insight; explore the depth, richness, and complexity of the programme, a quantitative study will not allow us to go in-depth and look at the different dynamics, as it is more concerned with quantities, amounts, testing relationships and examining cause and effect (Creswell, 2014). A qualitative study design gives an opportunity to answer the research question in depth, through the qualitative method of data collection (interviews and questionnaires) (Creswell, 2014). This way we had an opportunity to ask in-depth questions and probe more to understand how the programme can be or has been a good urban planning agenda, also looking into the SDG 11. The research questions that this research is seeking to answer are best answered through texts, descriptions and explanations, not numbers and percentages, therefore a qualitative study is more appropriate.

Through this qualitative study, it was possible to understand the different methods used by different organizations in how they measure the success of the upgrading process. The respondents were able to reflect on their professional experiences and how those have shaped their thinking when it comes to upgrading informal settlements.

This research taken on an interpretivist paradigm which focuses on understanding the subjective experiences and perspectives of different stakeholders within social contexts (Schwandt, 1994). In the context of this study, multisectoral organizations—such as government agencies, municipalities, and international organizations—may have varying definitions and criteria for measuring the success of informal settlement upgrading. By adopting an interpretivist lens as a researcher, I am able to explore these diverse perspectives and how they are shaped by each organization's mandates, goals, and contextual challenges.

Constructivism, on the other hand, posits that knowledge is socially constructed and context-dependent (Lincoln & Guba, 1985). In the case of informal settlement upgrading, this philosophy aligns with the idea that each organization's understanding of "upgrading" and its measurement may be influenced by its socio-political environment, organizational priorities, and interactions with local communities. Through a constructivist approach, I can explore how these diverse social realities shape the frameworks and metrics used by each organization.

In summary, an interpretivist and constructivist philosophy is justified for this study as it provides a robust framework for understanding the subjective, context-specific processes by which multisectoral organizations measure informal settlement upgrading. These approaches allow for a detailed exploration of the meanings, interactions, and social constructions that shape organizational practices, thereby contributing to a deeper understanding of the complexities involved in informal settlement upgrading.

The research adopted an inductive approach, which was deemed suitable due to its ability to generate insights from the data without relying on predefined hypotheses. This approach is particularly valuable in exploratory studies, such as this one, where the aim is to understand how multisectoral organizations measure the upgrading of informal settlements. Through inductive reasoning, patterns, themes, and concepts emerged from the collected data, allowing for a deeper, more grounded understanding of the subject matter, rather than testing pre-existing theories or assumptions.

3.4 Data Collection process

The first stage of the data collection method was a review of secondary documents in the form of academic and non-academic articles, journals and reports. The academic materials were found online using different platforms such as science direct, directory of open access journals, sabinet and JSTOR among others. A thorough examination of peer-reviewed academic journals, articles, and publications related to the research topic was conducted. These sources provided valuable insights, theories, and empirical evidence to inform the research.

All the material used for this study was selected based on a criterion; relevance – sources were chosen based on their direct relevance to the research topic and questions. Credibility – priority

was given to sources from reputable and authoritative organizations, academic institutions and government bodies. Diversity – The diverse range of sources including academic research, government reports, and NGO publications have been used to ensure a comprehensive and well-rounded analysis.

Industry reports were found mainly on the organizations websites, these include the National Department of Human Settlements website, The UN-Habitat website, provincial departments of human settlements and other organizations such as The Housing Development agency website. Various reports, publications, and statistical data released by government agencies and departments were accessed. These sources provided official and up-to-date information on relevant topics and trends. Credible websites, research institutions' websites, and online resources related to the research topic were explored for the latest news, updates, and additional sources.

Reports were used primarily to prepare for the interviews with participants, to verify the information from other sources and triangulate data with other information sources. Reading and going through the academic material by other scholars and reports before conducting interviews was a critical step because the academic material and reports contained important information such as the background on informal settlements, how they are viewed, the different tools used to monitor and evaluate them, the role of the participant being interviewed, and the various stakeholders involved in the measurement process. Knowing this ahead of conducting interviews was helpful because it drove the discussion and allowed the interview to be more structured and tailored for each context.

All interview questions were based on the background information gathered from the reports, the reports were used as preparation to filter out which questions were relevant and worth probing, and which ones were not. One of the questions that had to be filtered out of the interview guide was a question that referred to eradication of informal settlements. At least 60% of the reports mentioned that the aim is not to eradicate informal settlements as there are opposing views to how eradication happens, but rather upgrade the settlements. Another question that had to be modified was a question on the use of GIS when measuring the informal

settlements, this question was modified because it was a leading question that assumed all organizations used GIS based on the information gathered from literature, it was modified to be generic and ask about the different tools used to monitor and measure the progress.

Some of the materials used dated as far back as the 1980s, even though those materials were not very recent, they assisted with understanding the background on informal settlements and citing examples of where monitoring and evaluation of upgrading of informal settlements have been implemented well and achieved good results, they also showed the different ways that settlements have been monitored. This allowed for more probing on the current methods used by different organizations to measure the upgrading of informal settlements and analyze if there is consistency with the methods used by different organizations.

Doing the preparatory work shaped the interviews and allowed the interviews to be more focused and more nuanced. Preparatory work also saved time of asking questions where answers could otherwise be found in literature, and using words and phrases that are being used in the industry currently or have been replaced. This put the interview respondents at ease and trusted the interviewer because they could tell that there was a lot of preparation that went into the interview and questions and trusted that the research process was credible.

The interview questions were shared with the respondents ahead of the interview to give them time to prepare and put them at ease. This method proved to be more effective because it meant that the respondents were more comfortable, could respond to the questions logically and were well prepared to respond to all the questions that were asked.

[Data Collection Process: Interviews](#)

Primary data for this research study was gathered using interviews as one of the methods of data collection. According to Porter (1996), interviews are one of the most effective tools when it comes to data collection in qualitative research. What makes interviews so effective is that it does not only allow for interaction with participants, but it also affords the opportunity for the interviewer to observe verbal and non-verbal cues while conducting the interview. Even though, the interviews were conducted online, cameras were on and as the interviewers I was able to see participants' reactions to some of the questions, I could see the frustrations on the participants

faces and how their body languages changed when certain questions were asked, for example, the question about data collection had all participants showing their frustrations. Participants also showed their excitement when responding to some of the questions, for example, the question about their direct involvement on the upgrading process evoked excitement and pride in their eyes and their tone.

One of the benefits of interviews is that the interviewer is able to gain a deeper understanding and nuances of the participants' constructions through dialogue and body language when the participants explain and describe their experiences. The interviews allowed me as a researcher to probe further and ask for clarification where the response was not clear. The respondents were also able to ask questions of clarity where they did not understand.

Interviews offer flexibility by allowing the researcher to select participants and tailor the questions according to the research objectives (Wagner, Kawulich & Garner, 2012). In this study, a purposive sampling technique was employed to carefully select participants based on specific criteria. This ensured that only individuals meeting the established criteria were included in the study, enabling the collection of relevant data that aligned with the research focus. This approach allowed for a more targeted and insightful exploration of the topic. One of the criteria was that participants need to have been involved in a project or program that upgraded informal settlements one way or the other, to narrow it down, those that were involved were chosen on their level of involvement, were they part of the project team? Decision makers? Data collectors or town planners. The other advantage of interviews as mentioned is the opportunity to probe further and clarify some of the questions, and this was the case in during the interview process, because the questions were sent ahead of the interview, when the actual interview was conducted, the participants had the opportunity to seek clarity. Interviews have also been proven to have a high response rate compared to a questionnaire or a survey. 99% of the people that were asked to participate in the interviews agreed with the exception of 1 person that couldn't make it. Although the timing wasn't always perfect and had to be shifted a couple of times for some participants, in the end the interviews were conducted. All the interviews were conducted online using Microsoft teams and google meet with cameras on. While face-to-face interviews

would have been preferable, some of the participants were in different cities and countries, the online interviews still provided useful information.

The disadvantage of conducting interviews is that they take time to prepare, and if they are online like in the case of this research, it means one must consider the resources like devices to be used, connectivity and time difference if some participants are in a different geographic region. It was the case for this research, two participants were based in Nairobi, Kenya, which is an hour ahead of South Africa, so when scheduling time for the interview, the time difference had to be taken into consideration. Transcribing the content from the interviews also take time, and this was exactly the case, it took weeks to transcribe all the interviews.

[Semi-structured interviews](#)

Semi-structured interviews were prepared and conducted, meaning the interview schedule was followed, but also asked questions, probed, and followed up on lines of conversation not covered in the schedule but which were nonetheless relevant and important to the research questions (Maxwell, 1996). Flexibility in the interviews promoted the exploration of "gaps, contradictions and difficulties" perceived by the respondents involved, rather than a rigidly fixed interview schedule which might have prevented the participants from describing the program and implementation on their terms (Burman, 1994). The purpose of the interviews was to build on the narrative of how the programme aims to contribute to the 2030 target, the challenges and success, as well as reflections on possible enhancement to capacity and changes in the program design.

Even with the semi-structured interviews, the respondents were asked to be specific when responding and not generalize. And even though the questions were open ended and allowed for descriptions, narrations and explanations, they were focused on this research and aimed to answer the main research questions. This strategy assisted with providing opportunity for a rich conversation to take place but still be focused on the research. The strategy was also effective because participants were able to use specific examples of the measurement of upgrading that they know and have used and still described their advantages and disadvantages.

The interviews were semi-structured using a set of open-ended questions to be covered. The pre-determined open-ended questions allowed the interviewer to focus and direct the interview more closely but still have the flexibility to allow respondents to go into the details. The interview questions were based on literature review and shaped by the main research questions. The interviews aimed to understand how multisectoral organizations measure the upgrading of informal settlements and find out if the measurements were consistent throughout and coherent with the UN sustainable development goal 11 indicator 11.1.1- “proportion of urban population living in slums, informal settlements or inadequate housing”.

3.5 Sampling

A non-probability purposive sampling strategy is frequently used in qualitative research, particularly when the aim is to select participants based on their knowledge or expertise on the topic of interest rather than random selection. This approach is well-suited for studies like this, where the goal is to develop a deep understanding rather than generalize findings (Etikan, Musa, & Alkassim, 2016).

A purposive non-probability method is more appropriate. This research seeks to examine the efficacy of the Informal Settlements upgrading programme as an urban planning agenda to address the number of households living in Informal settlements, therefore the sample that participated in the study were based on a set criterion of judgement. These are people that know the subject and those that are implementing programmes. Clear criteria and rationale for inclusion are necessary and show that the sample was chosen purposively.

There was a purposive sampling of organizations, in this case the Housing Development Agency, UN-Habitat and City of Ekurhuleni Municipality, selected based on the following criteria: (a) their mandate in providing housing and shelter, (b) their involvement in the upgrading of informal settlements, (c) their contribution to policy and implementation of different upgrading programs and projects, (d) their closely working relationship with the National Department of Human Settlements, (e) their capacity and experience in implementing large-scale upgrading projects.

The respondents were selected based on 1) their involvement in the upgrading process, 2) their experience and 3) positions in the projects and programs. The selection process ensured that all

the respondents were experienced and were involved at high level in the implementation of the upgrading process. Selecting experienced participants meant that the participants were well-versed in the topic of informal settlements upgrading and could speak to the subject in detail and refer to different policies that are available, even give examples and recommendations of what they believe could work when it comes to measuring of the informal settlements upgrading process.

The following people were targeted; candidates from the City of Ekurhuleni Municipality in the programme office (at least 2 people) (Urban planners, policy specialist). Programme managers and implementers from the Housing Development Agency (HDA) (at least 3 people) to understand how the programme has been implemented and measured when it comes to upgrading and (at least 2) people from the United Nations Human Settlements Programme to understand how they measure the upgrading of informal settlements and whether the way in which different countries are measuring the upgrading of informal settlements is consistent and coherent with how the UN-Habitat measuring the upgrading of informal settlements.

Selection criterion:

Participants	No. of Participants	Data collection method	No. of Sessions
City of Johannesburg Ekurhuleni	2	Interview	1 with each person
Housing Development Agency	4		1 with each person
United Nations Human Settlements Programme	1		1 with each person

Table 1: Summary of data collection plan

The findings from sessions with participants have been interpreted in relation to information from others in the programme. The final component of the analysis involved interpreting the qualitative findings dialectically to one another, to provide a range of contextually specific and general insights.

3.6 Data Analysis

The data collected underwent a rigorous and systematic analysis process to derive meaningful insights and address the research objectives.

Data was analyzed using four dominant themes that emerged from the research process. The themes were aligned and consistent with those that were highlighted from the literature review, this was unsurprising because the literature review framed the questions and how the research would unfold. The data collection process from grey literature and primary sources assisted in understanding and becoming familiar with the subject matter and key issues around measurement of informal settlements upgrading. This then led to an effective analysis of data.

The 1st step in the analysis process involved organizing the data. The collected data, which encompassed information from academic journals, government reports, NGO publications, books, online databases, and websites, were systematically organized into categories based on their relevance to the themes. From the literature review, a comprehensive literature review was conducted to gain a deep understanding of the existing body of knowledge on the research topic. This step involved summarizing and synthesizing key findings, theories, and empirical evidence from the secondary sources. Interview recordings were transcribed non-verbatim, which means gestures and some sounds were excluded when transcribing, these could be sounds of laughter coughing; the transcription took a couple of weeks because each interview was at least an hour.

To identify recurring themes and patterns within data, a process of coding and highlighting similar and important words was undertaken, I kept highlighting the similar words as they came up. I was doing this to find words that kept on being repeated to develop themes. The codes were cleaned up and those that were similar were grouped together to form a group of codes which later became themes. Common themes and sub-themes were identified and categorized, allowing for a structured examination of the research area. Stirling's (2001) framework of thematic networks was used to organize themes, the framework of thematic networks is a qualitative analysis tool used to organize and interpret themes in a structured way. It involves three types of themes: **basic themes**, which are simple recurring ideas; **organizing themes**, which group basic themes into broader categories; and **global themes**, which offer a macro-level view

of the research findings. Thematic networks help researchers visualize relationships between themes, facilitating a deeper understanding of complex data by linking specific observations to larger theoretical concepts and research objectives. Finally, the analysis results were synthesized to address the research questions and objectives. This synthesis involved drawing conclusions, making interpretations, and providing insights based on the analyzed data.

The rigorous data analysis process ensured that the research findings were grounded in the available evidence, effectively contributing to a comprehensive understanding of the research topic. The insights derived from the analysis formed the basis for the conclusions and recommendations presented in this research report.

3.7 Data Saturation

The concept of data saturation played a pivotal role in determining the adequacy of participant inclusion for this research study. In this study, the iterative process of data collection and analysis demonstrated a consistent recurrence of themes and patterns across participant responses. As the study progressed, a point of redundancy emerged where new participants contributed incrementally to the understanding of the informal settlements upgrading and measurement but there were no new information or themes that were coming up. This saturation point signaled that the sample size was sufficient for achieving a comprehensive exploration of the research questions, based on this, the decision to conclude the interview process was made. The assurance of data saturation enhances the internal validity of the study, ensuring that the findings accurately reflect the depth and complexity of the subject.

3.8 Preliminary information gathered from the interview process.

The interview process only commenced once the literature review and review of reports and articles was completed. Programme managers, policy specialists and town planners were interviewed as part of this study. As highlighted above, the respondents were selected based on their experience and their level of involvement in the upgrading process. All interviews began with a background section which included the introductory section. This section was important and provided a background on the respondents' experience, their duties and the extent of their involvement in the upgrading and measurement of informal settlements. The questions were important because they clarified the assumptions that were made by the study. Some of the

assumptions included that the participants were experts and knowledgeable in measurements of upgrading of informal settlements. Once their level of knowledge and expertise was confirmed from the background questions, there was no need to explain basic concepts of measurement and informal settlements. The interview therefore focused on measurement processes and tools.

The 1st questions asked the respondents' roles within their organizations with reference to their role within the upgrading of informal settlements projects. The study found that the respondents that were interviewed hold positions from middle to senior management positions within their organizations. The respondents hold advanced academic qualifications, these range from B-Tech to master's degrees in various fields, including engineering, town planning, project management and town and urban planning, with extensive experience within the human settlements sector. It was interesting to find that respondents possess a variety of expertise and knowledge. This was important to establish because it gave a sense of the level of knowledge and expertise do respondents have when it comes to the subject of informal measurement and the understanding of measurement when it comes to upgrading of informal settlements. The respondent all had over 7-years working in the human settlements sector, and several years working on upgrading projects.

Respondents were asked to give an example of an upgrading project or programme that they were part of and their roles in the project. This question was important to establish the level of involvement of respondents in the upgrading process and understand the point that they would be answering from. The study required people that have been involved in the upgrading and measuring of upgrading process at different levels, from strategic to implementation and data collectors. The study found that all the respondents have been part of the upgrading of informal settlements team at different levels, at national, provincial and municipal level:

"I am a town planner by profession working for the municipality. I have worked for different organizations within the Human Settlements sector. My educational background is in urban and regional planning, and my highest qualification is a master's in urban and regional planning."
(Respondent 1, personal communication, October 10, 2022).

And:

"I hold a Master in Geographical Information Systems, Environmental Science. My experience is in Environmental Planning and Management, Emergency coordination, participatory planning, policy analysis, disaster Management. I currently work with different countries on the implementation of policy on the upgrading of slums." (Respondent 2, personal Communication, October 12, 2022).

And:

"I hold a master's degree in urban and Regional Planning, and a postgraduate diploma in Project Management. I have also completed short courses in Geographic Information Systems and Environmental Impact Assessment. My experience is in Human Settlements, Spatial planning, policy formulation and analysis, Informal Settlements and Project Management." (Respondent 3, personal Communication, October 23, 2022).

The three respondents above all have master's degrees in their specific fields of study, 2 of the respondents have master's degrees in urban and regional planning and currently work as town planners in their respective organizations. All the 3 respondents had a good understanding of urban and regional planning including policy analysis. The study required people that understood urban planning, because the issue of informal settlements and the upgrading thereof really stems from poor urban planning amongst other things. It was important for the respondents to be knowledgeable in the field of urban planning, policy and project management.

All the respondents had experience implementing the informal settlements upgrading projects and programmes at different levels and scales (national, municipal level, and very small projects and huge nationwide projects):

"I have worked as a town planner for informal settlements programme, and my role was to work on the design of the informal settlements, designing new settlements this included all the town planning processes (land acquisition facilitation, township establishment, sites and services). I have worked on more than 10 upgrading projects, overseeing all the town planning aspects of the project." (Respondent 1, personal Communication, October 10, 2022).

And:

“Our Mandate is to assist countries to promote sustainable Human Settlements, in this case the settlements are cities, towns and including villages as such. My role is to support and work with countries to promote and achieve sustainable settlements, which is essentially to improve slums. This means assisting countries to implement policies that support the improvement of slums, and also collecting setting up data collection tools for countries to report on their upgrading processes so report to the UN-Habitat.” (Respondent 2, personal Communication, October 12, 2022).

Based on the responses from the participants, there is enough confidence that the people selected to participate in the study were the right people. The respondents had theoretical and practical experience of implementing and measuring informal settlements upgrading and therefore could speak from a position of being informed. The level of experience and involvement of the participants increased the integrity of the respondents and the study and was helpful in ensuring that the research questions and objectives could be answered.

3.9 Assumptions that the study made:

Respondents answered truthfully: Interviews were a critical component of this study, the information received from the interviews have been used to formulate conclusions on the measurements used by multisectoral organizations on informal settlements. It was assumed that participants would answer truthfully and honestly to the interview questions based on their professional experience, and that participants would respond accurately to the best of their abilities.

Information provided by the participants is true and accurate: The information and data gathered from the interviews accounted for a large portion of this study. This is an academic study that is intended to contribute to literature and the industry, therefore it was important for the research to contain accurate and truthful information from people that have the experience and expertise of the industry.

Respondents were knowledgeable in the matter of informal settlements upgrading measurement: The study assumed that all respondents were subject matter experts in informal settlements upgrading and measurement.

3.10 Accessing the field:

The participants of this study could be categorized into three groups, and the strategy for accessing them differed. The 1st group was made up of town planners in different organizations (Implementing agency of the National Department of Human Settlements and the Municipality). These were respondents that could speak to the initial stages of informal settlements upgrading process and the measurements of success. This group had experience in the enumeration process, land acquisition, township establishment and data collection of the monitoring process. My approach for accessing this group was to send a telephonic message since I had a relationship with them, the message was clear that I was looking for participants for my research study (which I explained the study) and asked them if they would be willing to participate. This was after I had received form permission letter from the accounting officers to interview some of the employees. The messages were then followed by a formal email where I detailed the purpose of the study and suggested a time and date for the interview to take place. This approach was effective because I did not have to struggle with trying to get contact details of the participants and having introduce myself. Once the date and time was agreed, I sent a Microsoft team and google meet invites for the interview to take place. All the participants attended the interviews as agreed. Interview questions were sent to the participants ahead of time so that they could be prepared to answer the questions on the spot and be elaborative in their answers without forgetting some of the details. It is well established that conducting research involving individuals with whom one has a personal relationship can compromise the credibility of the results. This compromise arises from the familiarity between the researcher and participants, potentially leading to confirmation bias, where the researcher may unintentionally interpret information in a way that supports their pre-existing beliefs or expectations. Moreover, this familiarity can influence participants, prompting them to alter their responses or behaviors to align with perceived expectations, which can result in desirability bias, where responses are crafted to be favorable to the researcher. This concern was mitigated in the current research (Smith & Noble, 2014). The normal research ethical considerations were still followed, a self-declaration form was read out to participants, they were asked to provide voluntary consent, and the fact that the respondents had studied up to Masters assisted because they understood the research process and ethical considerations.

The second group consisted of Managers and much more senior people who led of the upgrading process, people that made decisions on certain matters. This group of people was important to include in this study because they had strategic insights into the informal settlements upgrading process compared to the town planners who had technical abilities to implement. Their response provided a rich narrative of how programmes of upgrading are conceptualized and reported, and how the measurement criteria is put into place. In terms of contacting this group, there were some participants that I knew personally and some that I did not know. For those that I knew personally the process to contact them and interview them was the same as the one described above for town planners. For those that I did not know, I had to search the internet for contact details of the organizations, then emailed the organizations introducing myself and explaining the purpose of my email. This group was most difficult to access and took at least 2-months to get a candidate to interview. One of the participants I was only managed to get through to them 3-months later after multiple and consistent emailing and calling. Initially I contacted the United Nations Development Plan (UNDP) in South Africa where I spoke to one of the Managers, after a couple of calls she realized that I needed to speak to someone from the UN-Habitat, luckily she shared contacts of the UN-Habitat regional officer for Africa. I sent multiple emails to the gentleman before I could receive a response, and that response directed me to a different person who is based in Nairobi, Kenya. Being in South Africa meant that I had to align our time-zones so that we can meet and have a conversation. Eventually the meeting took place, and it was a fruitful conversation which contributed immensely to this study.

The third group consisted of Monitoring and Evaluation experts and Geographic Information systems professionals. This group of people was important to interview because of their expertise in measurement and systems. This group provided valuable insights on how the upgrading of informal settlements are measured, what was interesting was even their working relationships with town planners and project managers. They work as a supporting function on different projects by putting together measurement frameworks, indicators to be measured, setting up data collection tools and putting together reporting frameworks and dashboards. This group of people I knew personally and have worked with in the past. Contacting them was much easier and a similar process to that of the 1st group was followed, where I sent a whatsapp text asking

them to be participants of the study, then followed by a formal email explaining the study objectives and questions, and then agreeing on a time and date of when the interview would take place. All ethical considerations were followed.

3.11 Reflections: Foundational frameworks, Time-factor, and emotional state

This section reflects what I have learnt while putting together this study. I will focus on factors that had an influence on the quality of the study, my experience of having to put together the report, and my emotional state during this period.

Foundational Frameworks- Theoretical and analytical frameworks are important foundations of every study, they usually guide and streamline the study, especially in terms of hypothesis, methodology and data collection. I wish I understood this better right from the beginning. One of the things that delayed the research process and affected the quality of the work in the beginning was my lack of understanding the foundational frameworks and how to use and apply them in my study. This has been a learning curve at some point frustrating but above all enlightening. The research process has been a learning curve overall. Learning to write academically, which is something I struggled with in the beginning, and then understanding the terminologies have really been eye opening.

Time-factor – A lot of my time for this research was delayed by getting the topic and research approved by the Panel. I had to go back to panel twice because I needed to fix a couple of things on my research. This delayed me by 3-months, as a result everything started 3-months later. When I started the process of data collection, I realized that I needed to obtain ethics clearance from the ethics committee, this further delayed the data collection process. When it was time to get permission letters signed by the accounting officers on the company letter heads it was a mission. A lot of the organizations I contacted are government organizations, therefore obtaining a signed permission letter by the CEO or accounting officer proved to be a huge issue, it took at least 2months in some instances. All the processes that were required to be completed ahead of the data collection process took longer than I had anticipated and as a result it caused a lot of delays and brought about a lot of anxiety and worry. The worry was mainly on whether I would be able to complete everything on time and submit good quality work. I believe it would have

been better to start contacting the organizations I intended to work with on the study well ahead of time and not wait until data collection time. In hindsight, I realize that one must think about the data collection process and the feasibility of collecting that data at a point of choosing the topic that would really assist.

Emotional state – During the period of putting together this report my emotional state kept changing. In the beginning I was confident and ready to take on the challenge, I was excited and believed I could do it. When the data collection process started taking longer than expected, I started to get anxious but still believed I could do it. Things started to slow down as I waited for responses from some of the organizations and respondents, during this time work was hectic and I was dealing with a lot of things on my private life which led to me neglecting my schoolwork. Towards the last months of the year, a lot of worry came over me, I started losing faith on whether I would be able to complete everything and submit good quality work. All the emotions have been felt during this time, from confidence, excitement, to worry, anxiety and at some point, a feeling of failure overcame me. In the end I was determined to complete and submit good quality work that could contribute to literature, and I did just that.

3.12 Reliability and Validity

Reliability and validity in research are closely related because validity presumes reliability, this means, if the measure is not reliable, it cannot be valid (Bell & Bryman, 2017). Because the programme Upgrading of Informal Settlements is a nationwide programme, the expectation is that the results can be generalized, consistent and therefore reliable. Good research practice has been considered, and results have been reported truthfully so that even when someone else tests the reliability of the results they can still arrive at the same conclusion. The aim is to have the lessons from the study influence how other municipalities implement the programme.

To ensure validity, the first method was data **triangulation**. Data was collected from multiple sources; this was done through interviews and documents review. There were also multiple participants from different organizations responding to the same questions. This was important for this study because it assisted the researcher to understand the different measurements of informal settlements upgrading used by the different organizations. The method of having

participants from different organization was effective in the end because during the data analysis phase it became evident that organizations in this industry work together and have the same understanding of what informal settlements upgrading is, and how to undertake it, hence they use the same methods to measure the upgrading process and define a successful upgrading process.

Different data collection methods were used in this study. Literature review was used as the initial method of data collection, and then interviews were conducted with participants, alongside that, reports were also reviewed. Literature review was used as a foundation to understand the subject, understanding how other scholars have undertaken similar research and what they have uncovered, more than anything it was used to identify the gap in literature that this research could fill. The reports were used as preparation for the interviews with participants, this was done so that the researcher does not seem to be ignorant and to ask questions that could contribute better to the research. The reports were also used as a secondary verification data source of what comes out of the interviews. The interviews provided nuances to what was found in the reports, and the personal experiences of the respondents when it comes to the measurements of informal settlements in their specific projects.

Peer examination has been valuable to this research. Guidance was sought from fellow researchers, colleagues and friends who have conducted master's research previously. The experiences and views of other researchers helped shape this study. During data collection especially during interviews, it was important to be aware of my biases, and being aware helped me remember that it is important to ask the questions and listen to respondents, probe when there is a need without leading respondents to a specific answer. Letting the voices of the respondents dominate and listening more really assisted.

To ensure the reliability of the results, consistency in data collection, analysis and reporting was kept, this was done by making sure that the same Key Informant Interview questions are the same for all the participants, they are stored in the same hard drive which requires a password to open. Data has been analyzed the same way for all the interviews and reported according to the themes that are coming out and what the respondents are saying. The reputational analysis

method has been used to ensure reliability and support the claims of reliability. This has been done using exploring and explaining contradictions between the different responses of the participants in the interview. Internal reliability was achieved by means of triangulation and documenting the entire research process including justifying the choices made.

3.13 Study limitations

There are potential limitations to the study which may be due to constraints on methodology or research design, these limitations may impact the whole study or research paper.

The fact that the study is a qualitative study means that no statistical calculations and inferences have been done. A small quantitative component was included in the study by means of reporting on the number of informal settlements and the number of households found in the informal settlements. Because qualitative research is more descriptive, this means that it does not lend itself to any statistical analysis. Reliability and validity methods employed in this study aimed to resolve some of the limitations.

The primary data collection method of interviews has its own disadvantages especially when it comes to the analysis of that data. The transcription method used in this study, which is non-verbatim which excludes some of the reactions of the participants could result in the loss of precision, reduce accuracy and has a high chance of being subjective is a limitation of this study. A great effort has been made to make the study as rich as possible and give context and nuances of the subject so that the reader could draw what could be useful to their context.

The sample size is a study limitation; A small sample size had potential to increase the susceptibility to sampling bias and selection bias. That is why there was a set criteria and diversity of the participants to avoid the study results being skewed, leading to inaccurate conclusions about the relationship between variables.

Time factor - Limited access to respondents, especially within the government sector were a challenge and delayed data collection. Getting all the required documents (ethical clearance before conducting interviews) was important but also delayed the interview process. This meant that there was limited time to conduct interviews and analyze the data and write up. Online interviews really assisted in the end because this meant that participants didn't have to travel

from far to meet up with the researcher. Good time management and efficient working was employed to ensure that the study is still able to draw conclusions and answer research questions in the allocated timeframe. And a great effort was made to put together a good quality research study in the limited time that was available.

3.14 Ethical Considerations

In line with good research practice, ethical considerations have been practiced. This entailed disclosure of the methodology to the participants which speak to the respondents' rights to know, the respondents' right to protection, respondents' right to privacy, respondents' right to confidentiality and anonymity and accurate reporting of results (Lars et, al., 2018).

The ethics process and the conduct ensured that research recipients are treated with respect, suffer no undue risk or harm, know that they are participating willingly and that their opinions are confidential. All participants will be asked to provide voluntary informed consent to participate in this study.

To ensure that the research is conducted in an ethical way, study participants were sent a formal email which outlined the purpose of the study, their participation and the email included an ethics certificate that has been obtained from the ethics committee so that participants could trust the integrity of the research. Interviews were only conducted after consent had been received from participants. A consent form asked participants to sign that they agree to be interviewed and that they understand that they are volunteering to be part of the study and there is no incentive to being part of the study. The email to participants also included a Participant Information Sheet (PIS) which invited participants to be part of the study and explained their role in the study, and the role that of the researcher. The PIS also explained the right of the participant which included the right to withdraw at any time, not forced to respond to any question that they may feel that it is uncomfortable to them and gave them an opportunity to ask questions.

All the data collected has only been used for the purpose of this study, the participants have been made anonymous and their personal information will not be shared with anyone. The data has been stored on an external hard drive which is kept safe in my personal belongings, and also

requires a password to open for data security and protection. All respondents have been notified that they will receive the final report after all the university processes of marking and releasing the results have taken place. No reputational or organizational risks have been identified during this study. No participants were put at risk in any way.

The relationships that I had with some of the participants were professional relationships which were established when I used to work for the Housing Development Agency. I did not hold any management position at the organization, and I no longer work at that organization when this study was undertaken. I do not believe that there are any power dynamics from my position that may have influenced the study.

The purpose of the research is not to expose people or use people's experiences to perpetuate a narrative but rather to educate and contribute to literature. Identities of participants have been kept anonymous so that they are not easily identifiable. There are no names and organizations in the quotes, although I cannot guarantee that some of the members of the organizations will not be able to identify the information that relates to their organization, I had to find a balance of how I report the facts as they are and still maintain confidentiality that was promised to the participants.

3.15 Positionality

The positionality statement included my name, identity in society as it relates to the research, that I am a student at the University of Witwatersrand and have no material or monetary benefit related to the research, but I acknowledge that my background might influence how I view the topic and the world. My background, gender and race were included in the positionality statement because they define who I am as a person in society. The positionality statement was transparent so that nothing is left to question or conclusion about who I am, what my research is about and my position in the research or the reason for conducting this research study.

3.16 Feasibility

The feasibility of the research to be conducted at a time when we are moving towards the national elections in 2024 was considered because the subject is political and the participants of the study were mostly government employees, therefore data collection was conducted before

the elections. Special permission and documentation were obtained from the accounting officers of the municipality and the HDA.

CHAPTER FOUR: FINDINGS OF THE RESEARCH

This chapter represents findings that emanate from the different data sources. The study represents a good balance of findings that have been drawn from interviews, literature and different reports. The chapter is presented according to the key themes that came out of the research process and findings for each theme. Each theme is represented in such a way that it links to the literature review and reveals what was found in the interviews, including common points and diversions. At the end there is some analysis and a conclusion of the chapter.

Three themes have been drawn from this research. The themes are; defining informal settlements, informal settlements upgrading approaches, measurement; monitoring and evaluating the upgrading of informal settlements, the section on each one then follows. The themes aligned very well with what was most common and dominant in the literature review. The theoretical framework shaped the research and resulted in these four common and consistent themes. All themes are linked together, and the main aim is to answer the research questions.

4.1 Theme 1: Defining Informal Settlements

Direct link to the following research questions

- What are informal settlements upgrading?
 - This question aimed to explore and understand how different organizations define informal settlements,
 - Find out if the understanding of informal settlements is consistent or divergent across different organizations and what are the implications?

This study aims to determine how multisectoral organizations measure the upgrading of informal settlements, and to do this, and draw conclusions, it was important to first define the concept informal settlements. This is arguably the 1st step to understanding how different organizations measure the upgrading of informal settlements. Literature review highlights that every human being deserves to live in areas that are habitable and sustainable for human settlements, the upgrading of informal settlements concept aims to transform informal settlements into

sustainable and integrated neighborhoods where residents have access to services (Isandla Institute, 2019). It was important to explore first how an area is classified as an informal settlement, this will help us understand why these areas need to be upgraded, and how the upgrading process is measured.

Based on the literature reviewed, there is a notable consistency among scholars regarding the definition and characteristics of informal settlements. Research indicates that informal settlements are typically marked by inadequate living conditions and a lack of basic services (UN-Habitat, 2016; Slum Dwellers International, 2018). The primary aim of upgrading these settlements is to create livable, sustainable human environments. Consequently, many organizations engage in upgrading efforts with the intention of fostering inclusive, sustainable human settlements (Todes et al., 2010).

This research study, through interviews, aimed to understand how organizations classify an area as an informal settlement, and the challenges that are faced by these settlements. This question was important to understand because for us to get into the different approaches used, we first need to understand how an area is classified as an informal settlement. The reason this was deemed an important theme to explore is because there are many different types of areas that exist, and some of these areas are not prioritized to be upgraded, this begs the question of how do organizations classify an area as an informal settlement? The findings are not different from what was expected considering that many of these organizations work together. The discussions below are findings of the interview process with participants on how they classify an area as an informal settlement.

[Informal settlement as an area that is characterized by poor living conditions.](#)

As mentioned above, the participants for this study are people from different organizations and currently work or have worked within the urban development space specifically informal settlements. All the participants described informal settlements as areas that are characterized by poor living conditions. They describe poor living conditions as conditions that are not suitable for human settlements, areas that lack basic services, pose health risks to people and often lack formal legal titles and are characterized by irregular development planning.

The definition and classification of informal by the participants representing the different organizations are as follows:

“Informal settlements are different; they are seen as an issue of how close to conformity is an area/settlement to the formal settlement, if an area is lacking one or more of what could make it a formal settlement, e.g., proper housing structure, formalized area, social issues etc. Informal settlements/slums are more prone to poverty and lack basic services with very poor quality of life, there is higher crime in these areas, high pollution and lack of services.” (Respondent 5, personal communication, October 30, 2023).

Another participant from a different organization also went on to describe informal settlements as an area that lacks basic services and should be prioritized for upgrading. They explained that informal settlements often lack basic services and security of tenure, what was interesting was the way in which they described the land that is occupied by informal settlements. This participant used the word “unauthorized land” instead of “illegal land”, which in some cases you find that the word “illegal land occupation” is often associated with informal settlements:

“The first thing is that there is issues of basic services, they lack security of tenure, meaning they do not have title deeds, and occupy land that is unauthorized. Informal Settlements are also characterized by very high unemployment rate. There are no decent ablution facilities or water and electricity, either they do have, or they are usually connected illegally.” (Respondent 6, personal communication, November 3, 2023).

When it comes to challenges that are associated with informal settlements, what stood out the most which all the respondents mentioned in addition to the lack of services and poor housing structure, was the level of crime and unemployment rate which is quite high in these areas:

“There are those challenges like infrastructure, social issues and deprivation because people are poor. This is not a new discovery, when you have poverty, and you have people then you get social issues. In this case there is higher crime, which is not surprising, so we have those challenges of high unemployment and crime.” (Respondent 2, personal communication, October 12, 2023).

“The level of crime within the informal settlements is quite high, it could be because a lot of people are unemployed and therefore end up stealing as a solution to making ends meet.” (Respondent 1, personal communication, October 10, 2023).

A participant from a different organization also had a similar and consistent definition of what the organization describe as an informal area, which is an area that may require upgrading. This organization is an implementing agent of the Human Settlements, and their mandate is to acquire land and develop it for human settlements:

“Informal settlement is any area that lacks basic services, usually close to central business districts. They are on land that is not legal, people living there do not have title deeds and the housing structures are of poor quality.” (Respondent 7, personal communication, January 05, 2024).

What was most interesting overall from interviews was how participants still viewed informal settlements as a solution to the problem of housing in urban areas, participants acknowledged that there are not enough housing options especially for unemployed or low-income households. One of the participants, viewed informal settlements as an important solution to housing.

“The key thing to also pay attention to is that the slums also offer often the only solution to housing. Because most of the time families are new to the city and that is what they can afford, and sometimes also offer fallback when people are economically inconvenienced. So, there are challenges which I have mentioned like social issues, but some people still settle there because of affordability issues.” (Respondent 2, personal communication, October 12, 2023).

Another interesting finding was that informal settlements are categorized. According to literature, the settlements are categorized into 4 categories. The categorization is done to enable the strategic prioritization for different development plans and budget allocation (Mistro and Hensher, 2009), The categories were based on two main criteria.

1. Viability (is the site viable to be developed or not based on environmental and geo-technical settings) and
2. Readiness (Budget and bulk services availability)

Informal Settlement categories.

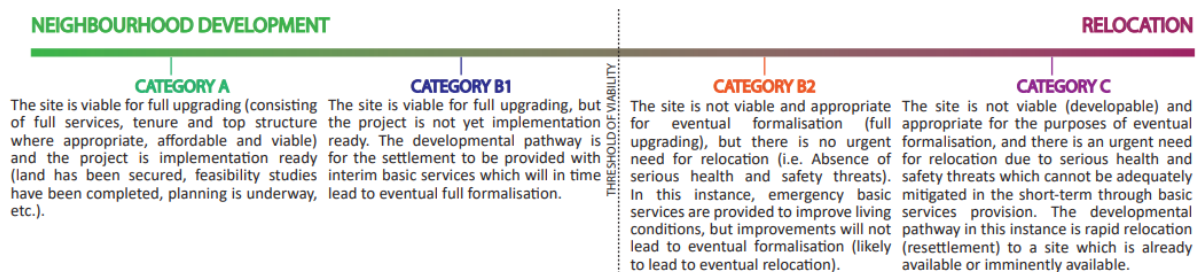


Figure 3: Informal settlements categories. Source: HDA, 2009

Participants agreed that there were different types and categories of informal settlements. When asked to elaborate on this, respondents said it was important for informal settlements to be categorized for planning and measurement purposes. Some areas lack one of two things that could make the area formal, whilst others lack everything that is required to formalize an area. For the purpose of resource allocation, planning and measuring success are an important part to prioritizing informal settlements upgrading. One of the town planners described that informal settlements are classified into four categories: 1) Category A, 2) Category B1, 3) Category B2 and 4) Category C. All these informal settlements are at different stages and require different intervention.

"We normally classify informal settlements into four categories. Category A settlements are those that are ready for implementation. Category B1 are partially ready. Category B2 is where we are deciding whether to relocate people or not, while providing interim services. Category C is full relocation." (Respondent 3, personal communication, 23 October 23).

Respondent from a different organization gave an example of the different informal settlements that they have had to categorize in order to allocate resources (financial, human and time) accordingly. The respondent explained that it is much easier to measure the success and set realistic targets when the goals are specific and measurable, the respondent explained that in the past it was difficult to measure and attain the targets set because of how the goals were set.

Categorization did not only assist in understanding the needs of the informal settlements but also measurement of success:

“There are four categories when it comes to informal settlements, these four categories are dealt with differently. There is Category A, B1, B2 and C. Categorizing has helped with understanding the issues that need to be resolved and also when it comes to setting targets and indicators.”
(Respondent 4, November 17, 2023).

All participants were aware of the different categories and explained that these categories are standardized and used to prioritize and allocate resources when it comes to the upgrading process of these informal settlements. The common alignment and understanding of what informal settlements are and how to categorize them across the different organization didn't come as a surprise because these organizations are implementing the upgrading project according to the different policies that exists. What was interesting though, was the wording and phrasing of what constitutes an informal settlement. Some organizations refer to them as slums and others even include villages as informal settlements, which then influences the categories in which the settlements would fall into:

4.1.2. Summary of theme 1

This theme provided useful insight and background on the issue of informal settlements. It was important for the study to show that when we refer to informal settlements, there is a common understanding among the different organizations and participants which is consistent with that of literature. The findings from the interviews are consistent with that of literature when it comes to the definition and categorization of informal settlements. The interesting thing that came out of this theme is how participants still felt like for as long as there are not enough housing options for people, informal settlements will continue to prevail because they offer solution to housing.

4.2 Theme 2: Informal Settlements Upgrading Approaches

Direct link to the research questions

- What are the different approaches employed by different organizations when it comes to informal settlements upgrading?

After defining informal settlements and their characteristics, it became clear that these settlements are not good for human settlements and therefore require upgrading or reconstruction. It is evidenced in literature that upgrading of Informal Settlements is quite different from developing vacant land or what we call greenfield (Abbott, & Douglas, 2001). Over the years, there have been strategies to implement upgrading of informal settlements, many of these strategies and approaches have mainly focused on the physical structure and the improvement thereof. This results in different and diverse approaches to upgrading, many of which are not sustainable in the long term. Abbott (2001) looked at three methodological approaches, which are Progressive improvement model of infrastructure provision, Microplanning or community action planning and Construction of a holistic plan (plano global). These approaches are consistent with the approaches that came up during interviews with participants. The wording might be slightly different, but the meaning and approach are the same.

The participants of this study were asked about the different approaches to informal settlements upgrading that they employ within their organizations, and the factors that influence the specific approach that they use. This question was important to rationalize the different approaches to informal settlement upgrading and identify the common or dominant approach that appear to underpin successful projects. Three main approaches that came up from literature, these approaches are; progressive improvement model of infrastructure provision, phasal approach and community approach and were discussed by other scholars also dominated the conversation during interviews.

4.2.1. Progressive improvement model of infrastructure provision/ Upgrading phases.

According to Mistro and Hensher (2009), informal improvement efforts can take two forms: redevelopment and in situ development and redevelopment involving demolishing an area, which necessitates relocating families to different greenfield locations. Typically, these greenfield sites are situated farther away from urban opportunities compared to informal settlements. In situ upgrading minimizes the disruption to socio-economic factors by reducing the number of households that need to be moved. The two forms of upgrading discussed by Mistro & Hensher is consistent with the findings from the interviews with participants. Participants consistently

mentioned that upgrading of informal settlement is undertaken according to phasal approach, this approach is like the progressive improvement model of infrastructure provision discussed in literature by Abbott. The approach is underpinned by the community participation approach, this approach is very similar to the community action planning or participatory approach and entirely the goal in most settlements is to achieve an integrated, sustainable human settlement. As indicated under theme 1 when we defined informal settlements; these are areas that lack basic services and infrastructure and therefore there is a need to upgrade these areas to ensure sustainable human settlements.

Participants indicated that they follow a specific framework when it comes to upgrading of informal settlements, and that is how they decide on the approach.

“There are existing frameworks on how to upgrade informal settlements, the government has also invested money to provide services because that is the current measure. The constitution also says we need to provide different ways of living; people need to have at least services.” (Respondent 5, personal communication, October 20, 2023).

What also came out from the interviews with participants is that one of the approaches to upgrading is progressive upgrading. Respondents explained that the organizations that they work for upgrade informal settlements based on four distinct phases, and these phases are undertaken progressively to improve infrastructure within these settlements.

1. **Phase 1:** preliminary planning, community engagement, setting up development targets, registration of beneficiaries, land acquisition, geotechnical investigations and dispute resolution.
2. **Phase 2:** detailed feasibility assessments and planning for development, which includes the development of a layout and engineering services if a settlement is deemed feasible for upgrading. Detailed project costs are assessed, and implementation timelines are framed.
3. **Phase 3:** the actual construction of new housing units, municipal services, and social facilities (if any) takes place.

4. **Phase 4:** the serviced sites or houses are registered in the name of qualifying beneficiaries. Some additional construction activities may also take place in this phase.

The decision on which phase to prioritize depends on the category of the settlement (these categories are mentioned under theme 1). Participants indicated that there is a process to be followed which is outlined in Part 3 of the National Housing code.;

“Normally when we upgrade there is a process that we have to follow as town planners, this process is based on 4 different phases, phase 1, 2, 3 and 4. Working according to phases assists with prioritizing the important aspects of upgrading especially when you are working with limited resources and against time.” (Respondent 6, personal communication November 3, 2023).

Another respondent from a different organization also mentioned the phasal approach to informal settlements upgrading.

“You do not just upgrade informal settlements, you have to undertake the process according to the phases that have been defined by the National Housing Code. These phases include all the aspects, starting with community engagement, all the way to construction. It is important for us not skip any phase when we upgrade.” (Respondent 4, personal communication, November 17, 2023).

What was also common among participants during the interviews when they spoke about phases was the importance of phase 3. Participants explained that all phases are important, but due to the lack of resources and the need to upgrade, it is important to at least upgrade to phase 3, this phase is the installation of services. Services came up a lot when the challenges of informal settlements were mentioned during interviews, even the findings from literature indicated that informal settlements often lack basic services. It made sense that the priority would be to at least aim to upgrade to the services level and only continue to phase 4 in situations that really require phase 4 upgrading and those are special situations:

“The important phase is phase 3 which is the services, that is why the government went back to saying; can we at least upgrade the settlements to phase 3. Moving to phase 4 is usually tricky because some people within the informal settlements do not qualify for houses.” (Respondent 1, personal communication, October 10, 2023).

According to the literature, the provision of basic services such as clean water, sanitation, electricity, and solid waste management is a fundamental aspect of upgrading informal settlements (UN-Habitat, 2015; Huchzermeyer, 2011). These services are critical for improving living conditions, enhancing public health, and promoting sustainable urban development, particularly in areas marked by socio-economic vulnerabilities and environmental risks.. Based on what the participants said about the prioritization of services, the overall narrative was consistent with that of literature:

“Right now, we are prioritizing phase 3, the UISP grant is focusing on that, it is actually one of the conditions, which is that we need to have a certain number of informal settlements upgraded to phase 3. So, a large percentage of the grant must go towards phase 3 for services. So now we are kind of forced to upgrade settlements to phase 3. This means even if a settlement is a category C (which means it has to be relocated), we are now forced to start looking for land and start with services. Services are even a standalone measurement now” (Respondent 3, personal communication, October 23, 2023).

One of the participants mentioned that even from her own personal opinion, after working on the different upgrading projects, she believes that prioritizing services is important:

“In my personal opinion, If I was a decision maker, I would still prioritize services. Access to basic services such as water, roads, and sanitation is very important for everyone regardless of where they live”. (Respondent 7, January 05, 2024).

The highlighting and prioritization of services within the informal settlements when it comes to upgrading is consistent with the UN sustainable development goal 6 of ensuring equitable and access to clean water and sanitation for all. This prioritization also links to SDG 9 of developing “quality, reliable, sustainable and resilient infrastructure”. This was an encouraging finding, more so because during the 2020 COVID pandemic we saw the need for services being important, people needed water to wash their hands, sanitation and other services to stay safe.

4.2.2 Community participation

What was prevalent from the literature review and the interviews was the involvement of communities in these upgrading projects. This interestingly came up as an approach which

underpinned what most participants described as most successful projects that they have been a part of.

The participants were asked whether they involved community members in the upgrading project implementation. All the respondents said yes. What was interesting was how majority of the participants explained how this is a requirement, but the extent to which community members are involved varies. Participants explained that the 1st stage or phase in the upgrading process is the inception; this phase involves community engagement, setting up targets and resolving any disputes that may arise. Community participation is often described as a process of actively seeking inputs and involving beneficiaries to influence the direction and execution of projects (Paul, 1987). According to Paul (1987), community participation in any project may improve project efficiency. Involving community members right from the beginning of the project and gathering inputs from community members at planning stage could lead to a project becoming more efficient because of the timely beneficiary inputs. About 70% of the respondents reflected how community participation can often be a tick box exercise in some projects and this has led to some of the projects being unsuccessful. Underestimating or overestimating the power of community participation in any project could make or break a project.

All participants acknowledged the importance of community participation and explained that the upgrading process is meant to benefit the people, therefore, it is important to get thoughts and inputs of the beneficiaries that you are implementing projects for. The upgrading process involve multiple stakeholders and one of those stakeholders who have a high influence and high interest and need to be managed closely are beneficiaries or community members:

“In terms of systems act public participation is a requirement; we have a programme called National Upgrading Support Programme (NUSP), which has an aspect of participatory planning which is very important. Communities resist projects that are imposed on them. The 1st step is to involve communities and get their buy-in before appointing service providers to start work.”
(Respondent 1, personal communication, October 10, 2023).

Another participant explained that one way of engaging the community is through a process called community enumeration, this process essentially gathers details of the community members within the settlement, and this becomes the 1st stage of interaction with the community members:

“The 1st thing that we do in the upgrading projects is to know who is in these informal settlements, so we do what we call enumeration. In that process, we have public participation and understand community needs. So, when we come back with the project, they already know that it is what they have suggested.” (Respondent 6; personal communication, November 03, 2023)

The respondents above indicated that participatory planning is a requirement, and getting buy-in from the community member is always the 1st step. This is consistent with what Paul found that in his study of Community Participation in Development Projects, he found that; incorporating community participation at project inception can provide valuable inputs for project design or redesign so that appropriate services are delivered. Another participant emphasized the importance of community participation in the upgrading project. The participant described it as a cornerstone to what their organization does:

“Community engagement is very important to our organization when we implement upgrading projects; meaningful participation is the cornerstone of what we do. Participation happens in many ways and at different levels, 1. Understanding communities living in these areas and data collection, empowering the community to have information about the conditions and what the plans are.” (Respondent 2, personal communication, October 12, 2023).

What was interesting to note from the interviews was the level and intensity of community participation that takes place in the upgrading process. Paul (1987) distinguished four levels of intensity when it comes to community participation; 1. Information sharing, 2. Consultation, 3. Decision making and 4. initiating action, though these different levels of community participation may co-exist in one project. Participants indicated that some of the projects that they have been part of only engaged community members at an information sharing level and this has often resulted in the failure of the project. While in instances where they have engaged community members at a high intensity where there was consultation, consideration of community needs and opinions when it comes to decision making and involving them in the implementation of the projects has resulted in very successful project:

“We first engage with community members at enumeration stage, this has to be done or auditing, the process involves community engagement to understand their needs and then prioritize

according to their needs. Community participation is key.” (Respondent 4, personal communication, November 17, 2023).

The above cited example shows that there is some level of community engagement, and this is often done right in the beginning, the purpose of the engagement is really to understand the needs of the community and prioritizing them.

For communities to truly feel ownership of a project, a certain level of engagement and participation is essential. Participants acknowledged that the projects that are implemented are meant to benefit the communities, therefore it is important for them to have a sense of ownership. This level of participation has been highlighted to contributing to the effectiveness of the project:

“The best way to go about community participation is to involve them, they must always feel like it is their project, because it is really their project. When the beneficiaries feel that they own the project, the process it becomes easier. So it always starts with community participation.” (Respondent 5, personal communication, October 30, 2023).

The other point that was made during interviews was that if communities are only engaged at a very low level which is information sharing. This often creates issues where communities resist the project, and it becomes difficult to have a successful project:

“If you go to communities and impose your plans or own development strategies on them, they often resist. Without having communities on board nothing is going to fly.” (Respondent 3, personal communication, October 23, 2023).

“I remember in one of the projects that I was part of, we went ahead to building new houses, installing services and completing the project without engaging community members thoroughly. When it was time to relocate people, the community members resisted and to this day the houses are empty and vandalized. This shows how important community participation is, and if you skip this important step, you will be wasting resources.” (Respondent 1, personal communication, October 10, 2023).

Summary of Theme 2

Based on the findings on the different approaches to informal settlement, it is evident that infrastructure upgrading is an important element to upgrading. Not only is infrastructure important but the type of infrastructure needed by the communities is important. Organizations can only understand what the communities need through community participation approach, therefore it is very important to engage the community members in every decision. The two approaches to upgrading of informal settlements are most common among the different organizations.

4.3 Theme 3: Measurement: Monitoring and Evaluating the upgrading of Informal Settlements

Direct link to research questions

- How multisectoral organizations measure the upgrading of informal settlements
 - What are the indicators that provide a tangible measure of the outcomes and effectiveness of the informal settlements upgrading programme?
 - What measurement tools are used by different organizations in measurement?
 - Are the measurements consistent and coherent across the different organizations?

The study was primarily about the different approaches to informal settlements upgrading and how this is measured by multi-sectoral organizations. It was therefore important to find out what indicators are used by the different organizations to measure the upgrading of informal settlements, which tools are being used and whether these measurements are consistent across the different organizations. The literature review has highlighted that monitoring and evaluation is a crucial aspect of good project management. We learnt from literature review that monitoring a project assist with data collection, keeping track of the progress and reporting on progress against target. Evaluation on the other hand is concerned with assessing the output/outcome of the project against the target and expected outcomes.

From interviews: All the respondents agreed that keeping track of the progress on the upgrading project is very important not only to the project team but to the stakeholders as well. They indicated that Monitoring and Evaluation forms a big part of what they do when they implement projects. Participants mentioned that the process of monitoring and evaluation starts with setting target to achieve, developing data collection tools, creating an M&E framework and an evaluation plan. Participants also indicated the transition to technology when it comes to monitoring of informal settlements and how this has taken long to adapt within their organizations but really increases efficiency.

4.3.1 Indicators

According to monitoring and evaluating the implementation of the upgrading projects is very important. Indicators and targets are agreed upon at the beginning of each financial year, this is to ensure that adequate monitoring, reporting and evaluation of the project to take place. The process of developing indicators and agreeing on targets is usually a collaborative process where the programmes team sit with the strategy team to agree on these:

“Monitoring and evaluation is very important in our projects. There is a monitoring and evaluation team within our organization, the team supports us with developing indicators, they come up with data collection tools and usually ask for data from us.” (Respondent 3, personal communication, October 23, 2023).

Majority of the participants (>80%) indicated that there is a monitoring and evaluation unit within their organization, this team supports them in ensuring that all the M&E requirements for the upgrading of informal settlements are in place.

“Luckily there is a monitoring and evaluation division that we work with. As the project team we are expected to monitor progress in the projects because we are on the ground. But in the beginning, there are target that are set and we report against these targets.” (Respondent 4, personal communication, November 17, 2023).

What was interesting when interviewing the participants on the measurement was how participants explained that for informal settlements to existing there are many issues at play. The issue is not only housing, but economics plays a role as well. In some instances, housing is not

very expensive, but incomes are low. Participants highlighted that measurement of successful upgrading need to be looked at holistically:

“When we look at what we need to address, we need to look at both upstream and downstream. Upstream you look at policies; adequate housing policies, how land market function to be able to have people accessing land for their own development. Employment and economic policies are also very important to look at, to address poverty and inequality. From there you can come downstream; at city level you need to look at whether cities have capacity to meet the demand for housing, infrastructures and services, and safety nets. Then come down at the very downstream which is sorting issues out at the household level; how are neighbourhoods planned, what security of tenure can you provide, where people can have flexibility in construction and how they live.”
(Respondent 2, personal communication, October 12, 2023).

When asked about whether there are key indicators that are considered when measuring the upgrading of informal settlements, all participants responded by saying “yes” there are specific indicators that they focus on. Participants mentioned that these indicators assist them with keeping track of the work that they do and being able to report. Some of the indicators that were mentioned during the interviews include acquisition of land for development and relocation of people from land that is not suitable for human settlements to land that is better suited for human settlements. Another indicator that was mentioned was the number of informal settlements upgraded to phase 3, and number of settlements assisted with relocation. Participants indicated that they normally have medium term strategic framework goals and these and the goals have targets which are then measured annually:

“Acquiring the land is an important indicator, within our organization we have an indicator on the number of hectares of land acquired for human settlements. This is an important indicator and takes priority because once you have acquired the land you can start with your pre-planning. That is where now you are doing your layout plans and township establishment, and then you can start installing services.” (Respondent 1, personal communication, October 10, 2023).

AND...

“The indicators are informed by the SDGs and the SDGs are informed by other secondary indicators like the Human Development Index (HDI). This is done to standardize the measurement indicators.” (Respondent 2, personal communication, October 12, 2023).

The acquisition of land for human settlements came up across all interviews as an important indicator that is agreed upon by different stakeholders. There are other indicators that participants mentioned such as number of serviced sites delivered, and number of housing units delivered:

“One of the indicators that we are reporting against is the number of informal settlements upgraded to phase 3. This is usually a lengthy process because phase 3 requires that the services are installed, and we are ready to start building houses. So, the target for us annually is usually 4 or 5 informal settlements upgraded to phase 3.” (Respondent 5, personal communication, October 30, 2023).

AND:

“In some cases, there is a need for relocation because the land where people have settled is not good for human settlements, so we set a target on the number of informal settlements assisted with the relocation. Relocation is the last option and not always recommended. The target for 2021/2022 financial year was 4 informal settlement assisted with relocation, and I am happy to say we achieved this target.” (Respondent 6, personal communication, November 3, 2023).

AND:

“We have very basic indicators for settlements which is access to water because it affects people’s health. Access to sanitation, because it affects people’s dignity, and security of tenure, because that is the cornerstone of how people start thinking about permanency.” (Respondent 2, personal communication, October 12, 2023).

The other indicator that came up prominently during interviews with participants is that of services. Participants even explained that this is an important indicator which looks at upgrading services such as installing water pipes, ensuring that people have access to sanitation and water:

“Installation of services is an important measurement when it comes to upgrading, sometimes we do not even get to a point of building houses in one financial year, but we aim to upgrade basic

services for most informal settlements.” (Respondent 3, personal communication, October 23, 2023).

4.3.2. Monitoring and evaluation Tools

After asking participants about the key performance indicators for monitoring progress on the implementation of upgrading projects, they were asked about M&E, the systems and tools that they use to monitor progress within their organizations. As mentioned above, all participants acknowledged the need for and importance of M&E in the success of the project implementation. According to literature there are many tools and techniques that could be used to enhance efficiency in monitoring and measurement. Recently there have been many digital based tools that have been used to monitor progress within the housing sector, one of those tools is the Geographic Information Systems (GIS). The GIS tool was mentioned by all the participants when they responded to the question about the tools that they use to monitor housing projects. Below are some of the responses:

“So, we use open GIS sources to monitor progress, one of the freely available one is google earth. A lot of the people are aware of google earth, many people within the organization use it mainly to confirm location. There are many advanced tools that have been developed to assist with the actual monitoring.” (Respondent 4, personal communication, November 17, 2023).

AND...

“We have developed a GIS based tool called the National Informal settlements database, and basically the information systems are used to capture information about the informal settlements, it’s boundary or extent and demographic information about the people living in the particular informal settlement.” (Respondent 7, personal communication, 05 January 2024).

GIS based tools seem to be the main tools that are used to monitor progress on these settlements because they allow for remote sensing, this is a technique of collecting information about an object or place without being close to it. Participants mentioned that this is the preferred tool because they cannot always be on the ground on a daily to monitor the upgrading process because of lack of resources, but they are still required to report, so such tool is very helpful.

Participants also mentioned that they use the tool from project inception up until the close out of the project:

“Informal settlements data is not static because these settlements change daily in terms of expansion and the number of households living in the area. It is very important to have a tool that is able to update the information as and when it is required. We have found GIS based tool like ArcGIS to be very helpful because we can see a picture of the settlements and compare the before and after upgrading to evaluate the difference.” (Respondent 3, personal communication, October 23, 2023).

AND...

“There is a lot of emphasis on digital tools lately, which makes it easier to collect data, and recruit communities to participate in data collection. Another tool that we use is household enumeration to collect the data on the households. We also use community mapping. We also do focus group discussions especially at evaluation stage to address the power dynamics between different groups (e.g., gender, economic groups or different people). These are more approach, but we can use digital tools for these approaches.” (Respondent 2, personal communication, October 12, 2023).

Another tool that was mentioned by 2 participants was the drone technology that they have used to fly over the settlement and collect data on the number of new houses that have been build and take pictures of how the new settlement looks:

“There has been some drone technology use, where a drone has been flown over a settlement in the Western cape in order to enumerate or rather do a settlement count. Even though the use hasn’t been adopted so much across the organization, we cannot deny the need and the benefits that we get from using such technology.” (Respondent 7, personal communication, January 05, 2023).

Participants were asked whether their organizations have undertaken evaluations when they implement the upgrading projects or after implementing the projects to determine success factors that made the projects or gather lessons learned that could be used to improve the implementation process and inform design of future projects. This question was important because it highlighted the extent to which organizations are looking to learn from the

methodologies that they are using and rely on evidence to design and improve the current approaches. The main aim was to understand which route do most organizations prefer and have seen it work in practise when it comes to the upgrading process. All participants said there have been number of evaluations conducted by internal staff and external consultants on the upgrading projects. They said some of the learnings are implemented but others are not depending on the stakeholders involved in the project design. Participants have mentioned that they have seen mistakes been repeated from one project to the other even though there are lessons learned that have been documented.

“We have undertaken baseline evaluations internally to ascertain the profile and status of the informal settlements targeted for upgrading, the main aim was to collect data on informal settlements targeted for upgrading and to classify them. We used different tools to gather the data and worked with the GIS team to analyse the data and classify informal settlements” (Respondent 5, personal communication, October 30, 2023).

Another participant from a different organization said that the monitoring and evaluation team of their organization contracted an external evaluator previously to conduct an impact evaluation study of upgrading of the informal settlements programme in selected projects.

“I know of an impact evaluation study that was commissioned some years back, and the results were published internally and externally. Some of those learnings we discussed them in different forums, and every time we start a new project and design it, we would informally discuss some of the learnings from the different studies”. (Respondent 3, personal communication, October 23, 2023).

Another key finding was how the monitoring data from the projects is used to evaluate the implementation process and implement some of the learnings into the same project and other projects as they are in progress.

“Our evaluation is also on-going, we have weekly meetings to check-in on how the projects are performing, and on our weekly report that we submit to management we include lessons learned and challenges which gets discussed in those meetings. Most times other project managers respond to our challenges with solutions that they have implemented for the same challenge

within their projects. We use those to enhance the design and implement better". (Respondent 6, personal communication, November 03, 2023).

4.3.3 Challenges experienced when it comes to measurement.

Participants were excited to talk about the digital technology that is slowly been used within the organization to monitor and measure progress on these settlements. However, they all agreed that there are challenges that they have faced when it comes to monitoring, evaluation and reporting of the progress. The major challenges that were mentioned by participants when it comes to measurements is the issues of resources and the availability of data. All participants indicated that not enough resources are invested into data collection be it tools that could improve efficiency or time to collect the data. The issue of the availability of data came up a lot, where participants felt that other organizations do not want to share the data and the difficulty in getting access to the data hinders the progress:

"Not enough time and Funds are invested into data collection, even though data is vital to the planning process, there is still very little investment that goes into data collection." (Respondent 7, personal communication, January 05, 2024).

AND...

"There is an assumption that data is readily available, this is not always the case because you find that other organizations do not want to share the data, this means we have to go out and collect the same data that they have ourselves. This is a major challenge." (Respondent 4, personal communication, November 17, 2023).

Another challenge that came up was the adoption of digital tools. Participants believed that the digital tools are helpful and very efficient when it comes to monitoring and evaluation. They have acknowledged the use of digital tools such as GIS based tools, remote sensing and drone technology, this is consistent to what has been reported in literature when it comes to digital transformation. However, this has come with its own challenges. Participants indicated that not all stakeholders involved in the upgrading process are open to using digital tool, so there is often a need to convince stakeholders on the benefits and the use of digital tools:

“Some stakeholders still prefer the old way of collecting data, which is administering physical surveys and going on site to take pictures which is time consuming in most cases. We have developed digital tool like surveys and dashboards that collects, monitors and reports on the upgrading process, but you find that those tools are hardly used because digital transformation hasn’t happened fully.” (Respondent 6, personal communication, November 03, 2023).

Digital transformation is not only an issue in the housing sector or M&E, but this is also an issue that has been reported in literature that the adoption of digital tools in South Africa is not picking up as quick as other countries:

“It is good that we have digital tools and people that can develop them, but the adoption hasn’t been as great as one would expect. We work a lot with community members to collect data, sometimes we are not able to use the digital tools because they do not know how to use them or do not have access to resources to access the digital tools developed.” (Respondent 5, personal communication, October 05, 2023).

Summary of Theme 3: Informal Settlements measurement: Monitoring and evaluation

Interviews were used to triangulate data from other sources. The findings on measurement are consistent with those from literature. Monitoring and Evaluation is important when it comes to successfully delivering on an upgrading project. The tools that have been used in monitoring progress are consistent across organizations. It seems that digital transformation is slowly being used when it comes to M&E even though there is a long way to the adoption of the digital tools.

Chapter 4 Conclusion

In conclusion, the findings of this research chapter highlight the complex and multifaceted nature of measuring the upgrading of informal settlements by multisectoral organizations. The study revealed that different organizations employ varying frameworks and approaches to evaluation, shaped by their specific mandates, operational contexts, and interaction with local communities. Despite these variations, common themes emerged, including the emphasis on sustainability, community involvement, and alignment with broader development goals, such as the Sustainable Development Goals (SDGs). The use of purposive sampling and qualitative interviews provided rich insights into the subjective understandings of "success" in informal settlement

upgrading, showcasing how these organizations navigate the challenges of infrastructure, social cohesion, and resource allocation. These findings contribute to the body of knowledge by offering a detailed examination of the evaluation processes, highlighting areas for potential harmonization across sectors to improve coherence and effectiveness in addressing informal settlements in a sustainable manner.

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

The purpose of this qualitative research study was to understand how the upgrading of informal settlements is measured by multisectoral organizations. In order to understand the purpose stated, this study looked at three organizations, that is, Housing Development Agency, United Nations Human Settlements Programme and the City of Ekurhuleni Municipality. The study reviewed reports on the upgrading of informal settlements, evaluations conducted and where measurement has been applied, and then used this information as the base for the interviews with study participants. Interviews were conducted to get first hand understanding from people that have been involved in the upgrading programme on how they understand informal settlements and upgrading, which measurement criteria and tools they use to measure the upgrading of informal settlements within their organizations and see if there is consistency in how the measurement is applied.

This chapter includes a discussion on the different organizations that formed part of this research process, also a discussion of major findings as related to the literature on measurement of informal settlements upgrading, a discussion on connections to this study and informal settlements upgrading measurement theories as discussed in the literature review, and lastly the chapter concludes with proposed areas for future research and summary.

This chapter contains discussion and future research possibilities to help answer the research questions.

1. How is the Informal Settlements Upgrading Programme being measured by multisectoral organizations?
2. Is the measurement consistent and coherent with the SDG 11 goal?

The analysis chapter detailed the findings that were drawn heavily from the interviews, with triangulation with other data sources including the reports, the literature review and observations made during the data collection process. The analysis chapter introduced the themes that came out of the process. This chapter begins with a discussion on the three organizations that formed part of this study. Followed by a recap of the themes that were introduced in chapter 4 and the evaluation questions that each theme responded to. The chapter

then proceeds with a more detailed discussion on the findings of each theme as well as their implications. The discussion chapter ends with conclusions and recommendations.

5.1 Discussion on the three organizations

In examining the approaches of the three organizations—UN-Habitat, the Housing Development Agency (HDA), and the City of Ekurhuleni municipality—towards the upgrading of informal settlements, distinct differences, as well as some commonalities, can be identified in their methodologies, objectives, and the scale of their operations. This discussion draws attention to how these organizations conceptualize, implement, and measure the upgrading of informal settlements, while considering the specific institutional and operational contexts in which they function.

1. Global vs. National/Local Focus:

UN-Habitat operates within a global framework, guided by international mandates such as the Sustainable Development Goals (SDGs), particularly SDG 11, which emphasizes sustainable urban development and inclusive cities. As such, UN-Habitat's approach is characterized by an overarching focus on sustainability, international standards, and advocacy for policy reforms that are applicable across different national contexts (UN-Habitat, 2020). It promotes participatory planning processes, working to integrate informal settlements into broader urban planning frameworks through the lens of resilience, environmental sustainability, and human rights (Tsenkova, 2020).

In contrast, the Housing Development Agency (HDA) operates at a national level within South Africa, functioning primarily as an implementing agency aligned with the government's housing policy. Its mandate focuses on facilitating land acquisition, human settlement development, and ensuring that national housing targets are met. The HDA's approach is policy-driven and more directly tied to the delivery of infrastructure and housing. It emphasizes formalization and the legal tenure security of informal settlements, with less focus on broader global goals and more on national development frameworks (HDA, 2015).

The City of Ekurhuleni municipality, as a local government authority, focuses on the specific needs and challenges of the urban areas under its jurisdiction. Its approach is often localized,

pragmatic, and responsive to the immediate urban challenges of informal settlements within its boundaries. Ekurhuleni engages directly with communities, addressing issues such as service delivery, local infrastructure, and land management. Unlike UN-Habitat’s global perspective or the HDA’s national scope, Ekurhuleni’s strategy is tailored to the local socio-economic context, reflecting the day-to-day realities faced by its residents (City of Ekurhuleni, 2022).

2. Approaches to Measurement and Evaluation:

Measurement frameworks for informal settlement upgrading also reveal contrasts. UN-Habitat’s emphasis on global reporting mechanisms, such as the monitoring of SDG progress, leads to the use of **standardized indicators** that can be compared across different countries and cities. These indicators often focus on access to basic services, tenure security, and resilience to climate change (UN-Habitat, 2016).

The HDA, while similarly concerned with measuring success, tends to focus on **national housing metrics**, such as the number of households upgraded, the provision of formal housing units, and the extent of tenure security. Its evaluation frameworks are aligned with South Africa’s National Housing Code and are largely **output-focused**—i.e., the number of housing units delivered, or the amount of land secured for settlement (Tissington, 2011).

In contrast, the City of Ekurhuleni’s evaluation frameworks are likely to be more **localized and context-specific**, focusing on qualitative and quantitative measures of infrastructure improvement, service delivery, and the socio-economic integration of informal settlements into the formal urban fabric. This more localized approach allows for flexibility in responding to the specific needs of its communities, but it may also result in **fragmented or inconsistent** measurement practices when compared to the standardized approaches of UN-Habitat or the more centralized frameworks used by the HDA.

4. Resource Allocation and Institutional Capacity:

The scale of operations and resource allocation differs significantly between the three organizations. UN-Habitat, as a global entity, often plays the role of a **technical advisor and facilitator**, providing guidance, knowledge-sharing platforms, and capacity-building support.

However, it relies on national and local governments to implement its recommendations (UN-Habitat, 2020).

The HDA, with its national scope, manages substantial resources allocated through government budgets, but it operates within the constraints of South Africa's fiscal environment. It must navigate complex bureaucratic processes, which can hinder the **efficiency of land acquisition and housing delivery** (Tissington, 2011).

The City of Ekurhuleni, by contrast, has **limited financial and technical resources** compared to the national and international entities. However, its ability to prioritize local projects and mobilize community resources can lead to more **innovative and context-specific solutions**, though these may not always be scalable or sustainable in the long term (City of Ekurhuleni, 2022).

Contribution to the Body of Knowledge:

This comparative analysis of the UN-Habitat, the HDA, and the City of Ekurhuleni reveals how different organizational contexts shape the strategies, measurement approaches, and outcomes of informal settlement upgrading. Understanding these distinctions contributes to the body of knowledge on urban development by illustrating the **multi-scalar governance dynamics** at play in the upgrading process. Moreover, it highlights the potential for harmonizing measurement frameworks to ensure consistency and coherence across different sectors, while also recognizing the need for **contextual flexibility** in addressing the unique challenges of informal settlements.

[5.2 Recapping the themes discussed in chapter 4.](#)

After undertaking the research process, it became clear that there was consistency in the themes that were identified in literature and those that came out of the interviews. This is not surprising because literature was used to craft research questions. In the end, there were three themes, namely: (a) Defining Informal settlements and upgrading, (b) Informal settlements upgrading approaches, and (c) Informal settlements upgrading measurements.

5.2.1 Theme 1: Defining Informal settlements and upgrading.

It was important for this research to start by defining the informal settlements and how the informal settlements upgrading is understood by individuals from different organizations who are working within the human settlements sector. It was very fitting to start with the definition of informal settlements, this paved the way for the research to make sure that there is an understanding of what we mean by informal settlements, and in itself, understanding the upgrading process could not be fully achieved unless there was a sound understanding of how practitioners understood this concept. This formed part of the interview questions because literature from other scholars had different views of what an informal settlement is, even though those views were different, they all had the same understanding.

The literature review highlighted that informal settlements are areas characterized by poor living conditions where they lack access to basic services, social amenities, infrastructure and usually have high crime rates, high unemployment, high pollution and overall unsustainable. Elsayed & Nassar (2018) have described Informal Settlements as a solution to the high housing demand in urban areas, and other scholars view it as an environmental and sustainability challenge. Marutlulle (2021)'s understanding of how informal settlements occur really is in support of Elsayed and Nassar, he views Informal settlements as Government's failure to provide adequate housing for people.

The findings from the interview process with participants on the understanding of what informal settlements were consistent with the findings from literature. All the participants (seven out of seven) defined informal settlements as areas that lack basic services, areas that have poor housing structures and infrastructure, areas with high crime rate and overall unsustainable. Participants agreed that these areas are unsustainable for human settlements, and no one should be staying in such areas. The other issue that also came up from interviews when defining informal settlements was the issue of land. All participants mentioned that these areas are usually on unauthorized land, some participants (2 out of 7) referred to unauthorized land as illegal, this is land that hasn't been authorized for people to settle on officially by the municipality or the government.

When reflecting on the entire research process, what has been important is that there is consistency in the definition of what classifies an area as informal. This is helpful when thinking about why upgrading of these settlements is so important, not only the upgrading but also the different approaches to the upgrading process. Respondents agreed that yes, informal settlements might be a solution to the high housing need, but there are many factors that influence the growth of informal settlements, it is not only the lack of housing options, but socio-economic factors also play a role. While defining informal settlements, respondents made a mention of the evolution of informal settlements and growth of these informal settlements. Respondents highlighted that most of the time people settle in these areas after migrating from their place of birth in search for jobs, some people cannot afford the other housing options that are available, they have found that there are also people who settle in these areas because they are close to their places of work and transport infrastructure. This understanding of the evolution and growth of informal settlement also consistent with what came up from literature review. The literature explained that these areas are often close to highways, rich suburbs, shopping centers and CBDs because these are some of the places that employ people, and some people cannot afford transport costs.

Another finding related to this theme which we touched on briefly above is the land tenure security. According to literature, Informal settlements often exist on land with unclear or contested ownership, leading to insecurity for residents. Evictions, demolitions, and legal disputes over land tenure which creates uncertainty and contribute to the vulnerability of these communities. The reason for interviewing participants from the chosen organizations such as the (HDA, the municipality and the UN) is because they work together to formalize the land occupied by informal settlements and issue title deeds to bridge the gap of security of tenure. All participants agreed that security of tenure is an issue of the land that is not formalized, and to offer people security of tenure, the process of upgrading and formalizing land need to be undertaken. There was a common sense of empathy of people staying in informal settlements, and respondents believed that they deserve better and that is what makes the upgrading of informal settlements such an important programme. The upgrading process does include a component of security of tenure and issuing of title deeds.

The perspectives from different participants representing different organizations confirmed a common understanding of informal settlements, and agreement that these areas are unsustainable for human settlements, therefore requires upgrading. The efforts that are being put into upgrading of these areas are important and should be encouraged. Including a representative from an organization such as the UN-Habitat really gave a broader perspective of how this subject of informal settlements is understood at an international level which governs and promotes the socially and environmentally sustainable towns and cities. South Africa is a signatory of the SDGs and committed to ensuring the realization of these goals, that is why it was important to find out whether the south African understanding of informal settlements is consistent with that of the UN-habitat SDG 11.1.

The findings from literature and interviews are really grounded by the theory of precarity discussed in the earlier chapter 2. The theory emphasizes the complex and multifaceted challenges faced by residents in these marginalized communities. It underscores the need for comprehensive and inclusive policies that address the interconnected dimensions of precarity, recognizing the rights and agency of informal settlement residents in shaping their living conditions.

5.2.2 Theme 2: Informal Settlements upgrading approaches.

The second theme that this study was interested in exploring was the different approaches to upgrading of informal settlements, this theme will lead us to the third theme of measurement of informal settlements. The main research question linked to understanding the different approaches employed by different organizations when it comes to upgrading of informal settlements is; What are the different approaches employed by different organizations when it comes to informal settlements upgrading? This question was prompted by findings from literature review which heightened that there are many ways in which informal settlements can be upgraded.

The findings from the literature highlighted two main routes which are theoretical and empirical (discussed in chapter 2). Based on the findings, many organizations use the two routes in different projects. Participants indicated that they have used lessons learned from other projects to design new programmes and implement new projects better, this is what the empirical route

talks about. And participants have also indicated that they document the projects during implementation and discuss the challenges and risks between other colleagues during implementation, this is essentially what the theoretical route explains, which is creating a theory while implementing.

When it came to approaches, literature identified 3 main approaches: (a) Progressive model of infrastructure provision, (b) community participation, and (c) Physical transformation through the holistic plan (plano global). The progressive improvement model by Choguill has been compared to the progressive housing improvement first proposed by Turner in the early 1960s and 1970s. Both models are based on the physical infrastructure being the primary element of settlement upgrading, this is seen as the core element in the upgrading process (Abbott, 2001). Findings on the progressive model link to the theory of incrementalism presented in section 2. The theory advocates for incremental upgrading over time and prioritization is important.

While literature discusses the community participation approach as a planning method which is closely linked to project management cycle stages where there is initiation, planning, design, implementation and maintenance. Many authors including Hamdi and Goethe (1996) argue that the planning stage is the most important stage. Planning stage is where stakeholders meet and make decisions about the project, this is stage usually includes community members and often referred to as community participation. The plano global approach has been defined as an approach that transforms the settlement all together, a new integrated sustainable human settlement is created.

The findings from the interviews, just as with literature review, is that the upgrading of informal settlements takes some approach in order to be successful. What was surprising from the interviews is that there are two main approaches that came up, these approaches are similar to the ones discussed in literature, which is community participation and progressive model of infrastructure.

The plano global approach was condemned by the participants. This approach has been defined by participants as an approach very closely related to relocation of people to a green field and create a new settlement. This approach has been condemned because from the participants'

experience, many of the people living in informal settlements do not want to move from where they are because it is convenient to their needs, close to public transport and places of work. Participants explained that this approach is only followed when the land on which the settlements are situated is undevelopable, this means that it is either on a wetland or has serious environmental issues, then they have no choice but to relocate people. Participants cited many examples where new houses were built for people to be relocated and when it was time to relocate those people they did not want to move, and the houses have been left empty for years to the point of being vandalized. This is how the community participation approach came about and why it has been effective.

Community participation approach came up quite often during interviews. Participants reiterated that community participation is very important when it comes to the upgrading process, they even went as far as saying it has been included as a measurement of upgrading of informal settlements. What came up from literature and interviews with the participants was the level and intensity of community participation. What was clear was that the more intense the community participation, the more likely a project will be successful. Participants saw this approach as also being very valuable to community members and involving the community in the upgrading process empowers residents to actively participate in decisions that directly affect their lives. This participatory approach fosters a sense of ownership and accountability among community members. All the participants had positive things to say about finding a good way to work with the community, they mention that it increases project efficiency and contributes to successful upgrading process. This was a pleasant surprise to hear that there is an encouragement to include community members in the planning and implementation of the upgrading process, not only at a level of information sharing, but also to seek their inputs and consider them in decision making.

The last approach which came up from all the people that were interviewed is the provision of infrastructure. Unsurprisingly this approach was the first one to be mentioned by majority of the participants when it came to informal settlements upgrading, this is unsurprising because when the participants described informal settlement, they described them as areas that lack basic services and infrastructure. This approach also came up in literature. What was interesting was

also how participants saw this approach as the most important approach. It is not mutually exclusive to the other approaches; in fact, all the approaches work well together. This approach is concerned with upgrading all other infrastructure within informal settlements. Participants indicated that the upgrading of infrastructure will not only have a positive impact on the housing department but also the economy within those areas. The lack of services that is prominent in informal settlements can sometimes be attributed to the lack of infrastructure. Participants made examples of how in some areas there no electricity and communities is connect themselves illegally and this is due to no or very limited infrastructure in the area. Some areas struggle with access to transport, and this is because of the poor transport infrastructure within the area. Therefore, it was unsurprising that participants mentioned the upgrading of infrastructure as the most effective way to upgrade informal settlements and create sustainable human settlements.

The findings from interviews and literature on how upgrading of informal settlements is undertaken and the purpose fits very well with the New Urbanism theory as discussed in chapter 2. The theory promotes the development of mixed-use, walkable neighbourhoods with a focus on compact and well-designed urban spaces (Grant, 2005). The theory encourages the integration of housing, commercial activities, and green spaces to create vibrant and sustainable communities (Grant, 2005). Participants indicated that the aim of upgrading informal settlements is essentially to create inclusive, integrated and sustainable human settlements through the upgrading of basic services, housing and security of tenure.

5.2.3. Theme 3: Measurement: Monitoring and Evaluating the upgrading of Informal Settlements

The last theme and really the most important of the three themes is the measurement of informal settlements upgrading by different organizations. The findings from this theme are that monitoring, and evaluation is a cornerstone of a good and successful upgrading project. All the respondents said that, right from planning to implementation monitoring and measuring success and outcome of the project is important.

What came up from the interviews which was quite interesting was the development of indicators to monitor and report against when it comes to the upgrading process. These indicators are unsurprisingly closely linked to what was been defined as lacking within the

informal settlements and what the upgrading process intends to achieve. Participants explained that at the beginning of the year they work with the Monitoring and Evaluation team to define indicators and set targets to report against. These indicators are consistent across the different organizations. This finding is consistent with the RBM theory which has a key component of setting clear objectives and indicators. The use of indicators allows for the monitoring of performance throughout the implementation of a program or project.

Participants mentioned that some of the indicators that they get measured against include hectares of land acquired for development of human settlements. This did not come as a surprise because literature highlighted that informal settlements tend to be overcrowded and some are on land that is not developable and in extreme cases there is a need to relocate people to areas that are suitable for human settlements. Therefore, this indicator is important because the provision of habitable land allows for better planning and development. The other indicator that came up from interviews with all the participants was the access to basic services and infrastructure development. Participants from different organizations explained that they get measured on provision of reliable water supply, sanitation facilities, infrastructure, and waste management. This is measured on assessing the availability and functionality of basic services, monitoring changes in infrastructure, and measure the percentage of households with improved access. This indicator made sense because of how informal settlements are defined and what the upgrading process intends to achieve which includes upgrading or provision of infrastructure and basic services. These indicators are consistent with the SDG 11.1 and 11.7. It was good to note that there is consistency in the measurement. The other indicator that came up quite often was the land tenure indicator. This indicator looks at the formalized land tenure, focuses on reducing risk of eviction, and increase property rights. This has been explained to be measured by tracking making sure that residents have the right to occupy the land and have been provided with title deeds. Participants even mentioned that it is part of organization's mandate and forms part of the key performance indicators to register title deeds with the deeds office and issue out those title deeds to the beneficiaries.

What was the most interesting and exciting from the interviews was the monitoring and reporting tools that are used by different organizations. It is evident from the interview

engagements that digital transformation has taken over, even though it is slowly being adopted, there is consensus amongst the participants that there is value in using digital tools. These tools have been described as efficient and good resources that save time and resources, these tools are used to monitor informal settlements in terms of expansion and changes and the progress of upgrading. The most common tools that came up from the conversation is the Geographic Information Tools (ArcGIS, QGIS, google maps) and remote sensing tools such as drone technology. These tools have been used in different areas to collect data on informal settlements, shows change detection and do informal settlements enumeration. Study participants were excited to explain that even though there are challenges, but it is promising that soon they would be able to collect and monitor all the data that they need from a distance. The use of live dashboards and maps were mentioned by participants when asked about the reporting tools that they use. Some of the participants explained that within their organizations, they have developed their own informal settlements tracking dashboards that they use to report on the progress of upgrading and any changes happening on the ground.

The digital migration in monitoring and measurement of the upgrading of informal settlements came up in literature where there were examples of how other countries have adopted the GIS tools to measure the extent to which informal settlements have been upgraded and monitoring the progress. Interviews confirmed that it is indeed the case in South Africa as well, different organizations are investing in technology to enhance efficiency in monitoring and reporting of informal settlements upgrading.

5.3 Conclusion

Chapter 2 discussed several frameworks for thinking about upgrading of informal settlements measurements. These included.

Theory of Precarity. The theory refers to the condition of vulnerability, insecurity, and uncertainty that informal settlements residents in such settlements experience concerning their living conditions, livelihoods, and access to basic services. Informal settlements, often characterized by inadequate housing, lack of formal infrastructure, and limited legal recognition, amplify the challenges associated with precarity. Some of the key concepts of the theory that are discussed

by other scholars include insecure housing tenure – where residents lack formal property rights. Limited access to basic services - Informal settlements often face challenges in accessing essential services such as water, sanitation, healthcare, and education and environmental hazards among many. The challenges and lack of services that is highlighted by the theory of precarity is consistent with the findings of this study when it comes to the challenges faced by informal settlements. Pratt (2010) has made substantial contributions to the understanding of housing precarity, particularly from a global perspective. Her work delves into the intersections of migration, gender, and the uneven distribution of housing resources, shedding light on the complex dynamics that contribute to housing insecurity. Pratt (2010), examines how economic, political, and social forces at the international level impact housing conditions, emphasizing the interconnectedness of housing issues across borders. She also addresses the dynamics of urbanization and its role in shaping housing precarity. Her research considers the unequal distribution of resources within urban areas, the consequences of gentrification, and the displacement of marginalized communities. This research contributes to the body of knowledge on the concept of precarity within housing by highlighting challenges faced by informal settlements within South Africa and why it is important to upgrade these settlements.

New Urbanism theory - Applying the principles of New Urbanism to the upgrading of informal settlements involves leveraging the movement's design and planning concepts to enhance the living conditions, infrastructure, and overall quality of life in these settlements. New Urbanism, with its focus on walkability, mixed-use development, and community-oriented design, provides a framework for transforming informal settlements into more sustainable, socially inclusive, and well-connected urban environments. Calthorpe (1993) is a key figure in the New Urbanism movement. In “The Next American Metropolis: Ecology, Community, and the American Dream” book, he discusses the principles of transit-oriented development and the importance of creating livable, sustainable urban environments. In the same breath, Leinberger (2007) explores the economic aspects of New Urbanism, emphasizing the value of walkable, mixed-use neighborhoods. The book “the Option of Urbanism: Investing in a New American Dream” discusses the benefits of urban investment and the positive impact on both communities and the economy. Through the findings of this study, valuable contribution to literature on how urban

development and housing incorporate and implement the theory of new urbanism. The upgrading of informal settlements aims to create inclusive and sustainable human settlements which are described to be closely linked to the new urbanism, creating connected and sustainable communities.

Incrementalism refers to an approach that involves making gradual and iterative improvements over time, rather than implementing comprehensive and large-scale interventions. This strategy recognizes the resource constraints, dynamic nature, and complex social dynamics of informal settlements. Incrementalism is usually applied through gradual infrastructure developments within settlements, instead of trying to upgrade all infrastructure and services at once, prioritization becomes important. The theory advocates for starting with addressing the most critical needs such as water and sanitation, health care, and housing, then gradually expand and improve over time. Lindblom's (1959) classic work discusses the concept of "muddling through" as a pragmatic, incremental approach to decision-making in public policy. He argues that policymakers often make decisions through a series of small, incremental steps rather than through comprehensive planning. In his 1964 study of *The Politics of the Budgetary Process*, Wildavsky (1964) explores the budgetary process and decision-making in government. While not exclusively focused on urban planning, his ideas on incremental budgeting and the role of small, incremental changes in shaping policy have implications for urban planning and governance. Incrementalism, often viewed as a practical and adaptive approach to policymaking, has faced significant critique for its shortcomings. Critics argue that its gradual, piecemeal nature can inhibit necessary transformative change, leading to stagnation in addressing pressing social and environmental issues (Lindblom, 1959). This approach may favor the status quo, privileging established interests and marginalizing the voices of those most affected by systemic inequalities. Additionally, incrementalism can create a false sense of progress, as small adjustments may not suffice to tackle complex, interconnected challenges facing communities today (Fischer, 2003). There is very little written about the application of the incrementalism theory within the housing sector and urban development, this paper through thorough research on how informal settlements upgrading programme is implemented will contribute to showing the implementation of incrementalism in practice. The gradual upgrading process starting with

sites and services to building of houses is a clear implementation of how development projects can be implemented through this theory.

Results Based Management theory by Jody Zall Kusek and Ray C. Rist represents a comprehensive approach to organizational management that prioritizes achieving measurable outcomes. By focusing on clear objectives, strategic alignment, continuous monitoring, and learning from evaluations, RBM provides a systematic framework for organizations to enhance their effectiveness and accountability in delivering results.

Four frameworks were narrowed down as most appropriate for this research. The four frameworks above were best theoretical frameworks that offered an opportunity for answering the research questions and understanding how other scholars have viewed the informal settlements upgrading. The theory of precarity as explained by Celliers et al., (2019), explains the key concepts of precarity in the context of informal settlements. This understanding of vulnerability and insecurity is important to understanding why informal settlements need to be upgraded and when the concept of measurement is introduced it is really to measure whether households within the informal settlements are now secure and safe. The other important framework is that of Results Based Management theory by Results Based Management theory by Jody Zall Kusek and Ray C. Rist (2009). The two theories will be discussed below based on a consideration of the literature review as well as the findings from the interview process.

5.3.1 Key aspects of the theory of precarity in the context of informal settlements

There are 5 important aspects related to precarity within settlements according to literature:

Insecure Housing Tenure: This area came as one of the key identifiers and challenge that people living in informal settlements are faced with. Pratt (2010), described precarity in the context of housing examining how economic, political, and social forces at the international level impact housing conditions, emphasizing the interconnectedness of housing issues across borders. Informal settlements are often characterized by high levels of poverty, contributing to the vulnerability of residents. Scholars argue that economic hardships, limited employment opportunities, and insufficient social support systems contribute to the precarity of living conditions in these settlements (Roy, 2005). The precarity of informal settlements is often framed

within the context of housing as a fundamental human right. Scholars argue for policies that prioritize secure land tenure, adequate housing, and access to basic services for all residents, advocating for a rights-based approach to urban development (Alston, 2019). Informal settlement residents often face social exclusion and stigmatization, limiting their access to resources and opportunities. Scholars discuss how negative stereotypes and biases contribute to the marginalization of informal settlement communities (Caldeira, 2017). While literature has highlighted that many people living in informal settlements do not have security of tenure, this research through interviews tested this notion by asking participants if this is indeed the case. All the participants when asked to define informal settlements highlighted that residents of the informal settlements often lack formal rights to occupy the land and do not have any title deeds for the land that they occupy.

Limited access to basic services: This concept of limited access to basic services was highlighted by many scholars in literature, noting that informal settlements usually have limited access to basic services such as water and sanitation, healthcare (clinics and hospitals), education (schools) and social amenities such as shopping centres, parks etc. The limited access has been attributed to the irregular settlement planning and poor infrastructure by many scholars. Through interviews with participants, this study was able to confirm that indeed informal settlements lack adequate access to basic services, and this is one of the issues and challenges that the upgrading process is aiming to resolve. Participants even highlighted this challenge as one of the important that should be prioritized when upgrading settlements. The precarity of informal settlements is often framed within the context of housing as a fundamental human right. Scholars argue for policies that prioritize secure land tenure, adequate housing, and access to basic services for all residents, advocating for a rights-based approach to urban development (Alston, 2019).

Environmental Hazards: is another issue or challenge that informal settlements are faced with. Most of the houses within informal settlements are vulnerable to environmental hazards such as heavy rains, sinkholes, landslides and areas with very high pollution. The precarious location of these settlements adds an additional layer of vulnerability for residents, who may face heightened risks during natural disasters. Scholars emphasize the health risks associated with informal settlements, including inadequate sanitation, lack of clean water, and overcrowded

living conditions. The resulting environmental challenges contribute to the overall precarity of residents' lives (UN-Habitat, 2003). Participants of this study indicated that in some instances when they are involved in the informal settlements upgrading project, they do not have a choice but to relocate residents of the informal settlements to other areas because the land that they are currently occupying is vulnerable to environmental hazards and therefore not suitable to human settlement. The highlighted that acquiring land that is suitable for human settlements is one of the indicators that their organizations are measured on.

Social vulnerability: According to literature informal settlements are often vulnerable to crime. The lack of formal governance structures and community services can exacerbate social challenges for residents. Informal settlement residents often face social exclusion and stigmatization, limiting their access to resources and opportunities. Scholars discuss how negative stereotypes and biases contribute to the marginalization of informal settlement communities (Caldeira, 2017). Study participants shared the same sentiments that often informal settlements are characterized by very high crime rate, this was associated with the lack of service delivery that informal settlements receive. This sentiment is consistent with that of literature of the lack of formal governance structures in the areas.

Unstable livelihoods: This came up in several literature where scholars described the lives of many people within informal settlements as unsustainable because of lack of security, this security is related to formal job security, benefits and formal job contracts which contributes to economic uncertainty for individuals and families. Many have indicated that often people in the informal settlements participate in the informal economy because of the high unemployment rate. Informal settlements are often characterized by high levels of poverty, contributing to the vulnerability of residents. Scholars argue that economic hardships, limited employment opportunities, and insufficient social support systems contribute to the precarity of living conditions in these settlements (Roy, 2005). Findings from interviews is that there is a lot of informal trading taking place within informal settlements. Respondents highlighted that there is a need to formalize businesses for people living in the informal settlements, and this could be done in different ways, one of the ways is to assist them with infrastructure and registration of

their businesses to become formal traders and assist them with growing their business. The lack of job security and unstable livelihood within the area is associated with precarity.

5.3.2 Measurement used in informal settlements upgrading.

The Results Based Management theory that we discussed in section 2 has been helpful in this research by assisting us in understanding the concept of measurement and how it is applied in projects. The theory has provided structure, guiding decision-making, enhancing the validity and relevance of the study, and contributing to the overall advancement of knowledge in the field of housing and human settlements.

Just as the precarity theory wherein we discussed the 5 aspects, in this section we will discuss findings from literature and interviews on how the 5 aspects are measured. One of the aspects of this theory is Performance Monitoring which involves continuous performance monitoring to track progress toward achieving outcomes. Monitoring involves the regular collection and analysis of data using pre-defined indicators. This real-time information allows organizations to make informed decisions and adjustments during program implementation. This study will make a great contribution to how Results -Based Management and performance monitoring is applied in the human settlements space, and outlining of indicators and how they are measured. There is limited information on literature when it comes to performance monitoring and evaluation of the urban development sector. Through interviews, this research has been able to establish indicators that are used to monitor and measure the upgrading of informal settlements and how far or close we are to achieving integrated and sustainable human settlements. This contribution to literature will be valuable to the urban development sector.

Insecure Housing Tenure: Based on findings from interviews with participants and information from literature. Organizations like the National Departments of Human Settlements, Housing Development Agency, Municipality and the UN Habitat advocate for security of tenure. The upgrading process of informal settlements involve making sure that people are provided with security of tenure. Participants of this study indicated that this is measured based on the number of title deeds registered with the Deeds office. Participants mentioned this as one of the most important indicators that have a target set at the beginning of the year, and annually they must

register a title deed for a number of households. Study participants indicated that the targets are monitored and reported on in monthly reports and quarterly reporting which sum up to the annual target.

Limited access to basic services: Came up as a consistent theme throughout conversations with participants. All participants believed that this is an important indicator that should be monitored regularly and when it comes to prioritization of resources due to limitations, access to basic services should be prioritized at the top. Participants indicated that the organizations that they work for have developed indicators to measure adequate access to basic services; Number of hectares of well-located land acquired or released for human settlements development, well-located land according to the Housing Development Agency (2009) is defined as land that is integrated meaning there is quick and easy access to services, amenities, transport and economic activities. The integration dimension assesses how well-connected and integrated the land is in relation to existing and/or planned amenities and infrastructure. Based on this, it is important for organizations to acquire well – located and integrated acquire for human settlements. The building and provision of basic services is a responsibility of other departments such as Department of Health for health care services. Department of water and sanitation is responsible for provision of water and sanitation. Different organizations work together to ensure that everyone has a better quality of life.

Environmental Hazards: Just like access to basic services, according to reports from different organizations and the information shared by study participants, the environmental hazards is measured based on the well-located land continuum. Participants explained that the measure is based on the hectares of suitable land acquired for human settlements. The suitability dimension of well-located land is based on the land's physical conditions (topography, wetlands and other environmental conditions and the geology of the land) (HDA, 2009). The aim is to acquire land that is developable for human settlements, is not sitting on wetlands, hazardous environmental conditions and very steep topography. According to participants this measured by the hectares of suitable land acquired and released for human settlements, a target of hectares of land to be acquired annually is determined and then monitored on a monthly and quarterly basis. All of this is done to ensure that there is adequate suitable land for human settlements development. The

land is normally used for people that need to be relocated from informal settlements because the areas that they have settled on is not suitable for human settlements.

Social vulnerability and unstable livelihoods of people staying in informal settlements are serious challenge experienced in by those living in informal settlements. As mentioned in the literature review, the purpose of the upgrading process is to ensure that all settlements are improved or upgraded to ensure that people live in areas that are sustainable and inclusive. According to participants and literature, this is measured based on how well-located the land is, this is in terms of alignment to existing provincial, municipal and government spatial planning. The aim is to acquire land close to economic, social and strategic infrastructure to allow services to be built. The partnerships and relations between the different public-private entities allow for the realization of the achievement of this component. This means that when different stakeholders sit together and prioritize on the plans, the human settlements department aligns its plans to those from other department to ensure strategic prioritization of resources and delivering on their mandate of building sustainable and integrated human settlements.

5.4 Ideas for future research and recommendations

This research has provided valuable insights on informal settlements upgrading and how different organizations measure the upgrading of informal settlements based on the reports from different organizations and a small sample of people from different organizations within the human settlements sector, future research could consider focusing on the relationship between the community members within the informal settlements and the organizations that are upgrading informal settlements to understand whether community members feel included within the process of upgrading and whether they believe their ideas and recommendations are taken into consideration. The other idea could look at the challenges of upgrading informal settlements and whether the current measurements are sufficient.

5.5 Recommendations

Organizations from different sectors should **embrace technology** and incorporate the use of technology more into their measurement. Digital migration is slowly taking over the world, and there are hardly unlimited resources to work with, tapping on different technological solutions

that could improve efficiency within a project could be valuable. In today's rapidly evolving world, organizations must embrace the transformative power of technology to enhance the measurement of project implementation. Incorporating advanced technological tools and systems can significantly improve efficiency, accuracy, and overall project success, this was confirmed by participants of the study when they described the value that they have derived from using digital tools for monitoring, collecting data and reporting on it. Automated project management software, data analytics, and collaborative platforms streamline communication, facilitate real-time progress tracking, and provide invaluable insights for informed decision-making. Furthermore, leveraging technology in project measurement fosters a culture of innovation and agility, positioning organizations at the forefront of industry advancements, one of the participants explained how they have developed a tool that is able to monitor and report on informal settlements expansion and changes. In an era where digitalization is a key driver of success, embracing technology is not just an option; it is a strategic imperative for organizations aspiring to thrive in today's competitive landscape.

Collaboration between organizations is very important. One of the things that came up during interviews was the issue of data and how expensive data is, and very little resources are allocated to the acquisition and storage of data. Participants highlighted a concern of other organizations not being keen in data sharing even though there is value in making data accessible and sharing it. In the age of interconnectedness and information sharing, organizations stand to gain substantial benefits by fostering collaboration and partnerships for the collective collection and sharing of data. By joining forces, companies can harness a wealth of insights that transcend individual organizational boundaries. Collaborative data efforts allow for a more comprehensive understanding of industry trends, challenges and opportunities. Shared data pools enable organizations to leverage collective intelligence, leading to more informed decision-making and strategic planning. Additionally, collaboration fosters a sense of community and mutual support, creating a conducive environment for innovation and problem-solving. As the digital landscape continues to evolve, organizations that actively engage in collaborative data initiatives are better positioned to navigate uncertainties, drive innovation, and collectively contribute to the advancement of their respective industries.

Lessons learned and practices from other projects focused on informal settlements upgrading globally should be considered when implementing an informal settlement upgrading project. To ensure the success and efficiency of the upgrading of informal settlements project, it is important for organizations and policymakers to draw upon the invaluable lessons learned and best practices from similar projects globally. Leveraging insights from diverse projects worldwide not only broadens the perspective but also provides a wealth of knowledge on successful strategies and potential pitfalls. By tapping into the collective experiences of other projects, project implementers can identify innovative solutions, adapt proven methodologies, and tailor approaches to the unique context of informal settlements in a specific region. This approach not only speeds up the learning curve but also minimizes the risk of repeating mistakes. The global exchange of lessons learned fosters a collaborative and informed approach, enhancing the likelihood of sustainable and effective outcomes in the upgrading of informal settlements, ultimately contributing to the improvement of living conditions for vulnerable communities.

To optimize project outcomes and foster continuous improvement, it is essential for project teams to diligently document their experiences and share this valuable information with industry peers. Documenting the project lifecycle, including challenges faced, successful strategies employed, and lessons learned, creates a repository of knowledge that can benefit not only the current team but also others in the industry facing similar challenges. Sharing this information promotes transparency, collaboration, and collective growth within the professional community. Through the exchange of insights, project teams can contribute to the evolution of industry best practices, enabling peers to build upon successful methodologies and avoid common pitfalls. By fostering a culture of open communication and knowledge sharing, project teams not only enhance their own expertise but also contribute to the advancement and efficiency of the industry.

Summary

This research paper makes a valuable contribution to the existing literature by addressing a critical gap in our understanding of sustainable urban development. By focusing on the upgrading of informal settlements, the research not only engages with the complex challenges faced by

marginalized communities but also offers a nuanced examination of the efficacy of various upgrading strategies. The measurement aspect of the study enhances its significance by providing a rigorous and assessment of the impact of upgrading interventions on key indicators such as housing quality, infrastructure provision, and community well-being. This research extends beyond mere documentation of upgrading initiatives by critically evaluating their outcomes and effectiveness, thereby contributing valuable insights to the scholarly discourse on urban development policies. The findings are expected to inform policymakers, urban planners, and researchers alike, facilitating evidence-based decision-making in the pursuit of inclusive and sustainable urban environments. Ultimately, the master's research offers a substantial and timely contribution to the literature on informal settlements, providing a foundation for future studies and policy recommendations in the realm of urban development and social justice.

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ANNEXURES

Email request to participants

Hi XXX

I hope this email finds you well. My name is Keneilwe Pholo, and I am currently pursuing a master's degree in Monitoring and Evaluation at the University of Witwatersrand. For my research project titled "**How the upgrading of informal settlements is measured by multi sectoral organizations**," I am investigating the approaches and strategies adopted by multisectoral organizations in measuring the progress of informal settlement upgrading, with a particular focus on Sustainable Development Goal 11 (SDG 11).

I am reaching out to request your kind permission to conduct an interview with you. The interview will be valuable to provide insights into the methods, challenges, and successes that the HDA has encountered while collecting data to monitor the upgrading of Informal settlements.

I assure you that any information shared during the interviews will be handled responsibly, and the final research project will be available for your review, should you wish to do so.

Thank you for considering my request. I look forward to your positive response. Should you have any questions or require further information, please feel free to contact me at 2413509@students.wits.ac.za or 0833956705.

Please find attached the consent form, the PIS and questions in preparation for the interview.

Consent form to participants

How the upgrading of informal settlements is measured by multisectoral organizations.

Keneilwe Pholo

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

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about. YES NO

I understand that I can volunteer to take part in the study YES NO

I agree that the interview/focus group/other activity may be audio recorded. YES NO

I agree that direct quotations from my interview may be used by the researcher in their research report. YES NO

I agree that my participation will remain anonymous (my name or other identifying data will not be used by the researcher in their research report) YES NO

I agree that other researchers may use the information I provide in my interview (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on. YES NO

..... (signature)

..... (name of participant)

..... (date)

Interview Questions

This study, therefore, aims to determine how multisectoral organizations measure the upgrading and eradication of informal settlements.

Research Objectives

1. To determine and compare how the different multisectoral organizations measure the upgrading and eradication of informal settlements.
2. To determine whether the way in which multisectoral organizations measure the upgrading of Informal Settlements is consistent and coherent with sustainable development goal 11?

Research Questions

1. How is the Informal Settlements Programme being measured by multi-sectoral organizations that are implementing the programme?
2. Is the measure consistent and coherent with the sustainable development goal 11?

Potential research questions

1. How familiar are you with the concept of informal settlements and their associated challenges?
2. Could you describe the role of your organizations in addressing the issues related to informal settlements?
3. In your opinion, what are the key indicators or factors that should be considered when measuring the upgrading and eradication of informal settlements?
4. Have you been involved in any projects or programs related to informal settlement upgrading or eradication? If so, what were the main measurement methods or indicators used?
5. What types of initiatives or interventions do you think are most effective in upgrading and eradicating informal settlements?

6. How do you think the success of your organization efforts in addressing informal settlements should be measured and evaluated?
7. Are there any specific challenges or barriers that your organization face when trying to measure the progress of upgrading and eradicating informal settlements?
8. What are the potential benefits of using the current approach in measuring the progress of upgrading and eradicating informal settlements?
9. Are there any existing frameworks or methodologies that you think could be useful in measuring the success of the current efforts in informal settlement upgrading and eradication?
10. How important is community engagement and participation in measuring the success of upgrading and eradicating informal settlements? What strategies or approaches have you found effective in involving communities in the measurement process?
11. Are there any specific data collection methods or tools that you believe would be valuable in measuring the progress of upgrading and eradicating informal settlements?
12. How do you see the current measurement being consistent and coherent with the national agenda and contributing to SDG 11?
13. How can the lessons learned from measuring the upgrading and eradication of informal settlements be used to inform policy development and decision-making processes?
14. Based on your experience and knowledge, what recommendations would you make to improve the measurement practices of organizations in addressing informal settlements?
15. How consistent is the measurement of informal settlements upgrading across different organizations?