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Zuma, Malibongwe H W

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Analysing the Contribution of Stakeholder Engagement in Public Hospital Infrastructure Projects

Submitted by:

Malibongwe H.W. Zuma

Student No: 2181090

Supervisor:

Rolien Terblanche

The School of Construction Economics and Management

University of Witwatersrand

Johannesburg

DECLARATION

I declare that this Research Report is my own, unaided work. It is submitted in partial fulfilment of the requirements for the degree of Master of Science (Building) in the field of Project Management at the University of the Witwatersrand, Johannesburg.

It has not been submitted before for any degree or examination in any other university.

Name of Student (2181090): **Malibongwe H.W. Zuma**

Signature of Candidate: 

ABSTRACT

Stakeholder engagement makes a major contribution to the implementation of public hospital infrastructure projects. This contribution is signified by the negative response the public infrastructure projects receive when end-users feel not being properly engaged. The aim of this research, therefore, is to identify the means of addressing lack of stakeholder engagement in the delivery of public infrastructure projects. This research uses a mono method qualitative strategy to collect empirical data from participants involved in the public infrastructure project management space. To fully comprehend the dynamics of the public infrastructure project stakeholder engagement phenomenon, the researcher conducted semi-structured interviews with participants. The data was collected using a face to face interview using an interview guide from eight (8) participants.

Results showed themes for key stakeholder, Involvement, Contribution, Critical issues, Standard and regulations and the status of the project. Results showed that participants can identify the key stakeholder for the respective projects however there is lack of stakeholder involvement.

The findings indicate that lack of communication contributes to stakeholder engagement not being properly done and that the stakeholder engagement checklist and the standardisation of stakeholder engagement are tantamount to addressing the issue of stakeholder engagement. This study recommends that stakeholder engagement checklist be done, include stakeholder engagement as one of the infrastructure project deliverables at the planning stage of the project, government must start engaging stakeholders at the pre-feasibility stage of the project and that government imposes a regulation that deems non-compliance with the responsibilities and requirements of stakeholder engagement.

Keywords: Stakeholder engagements, Involvement, Regulations, Compliance, Identification, Governance, Public sector, Public Infrastructure Projects, Hospital Infrastructure Projects

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LIST OF ABBREVIATIONS

Abbreviation	Description
CIDB	Construction Industry Development Board
CLO	Community Liaison Officer
EMS	Environmental Management System
GDP	Growth Domestic Product
GI	Gini Index
MSP	Managing Successful Programme
NERRS	National Estaurine Research Research System
NHS	National Health Service
OECD	Organisation for Economic Co-operation and Development
PE	Public Engagement
PMI	Project Management Institute
SACI	South African Construction Industry
SKA	Square Kilometre Ray
UK	United Kingdom

CHAPTER 1: INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

At the epicentre of the government's capacity to deliver and maintain infrastructure is the sustainability in collecting taxes and user charge revenue (Development Bank of Southern Africa, 2012). To successfully fulfill this mandate, the government needs to address the challenges of joblessness, poverty and inequality that are engulfing South Africa (Economic Development Department: Republic of South Africa, 2011). According to the Worldbank (2018), South Africa has the highest level of inequality, represented by 68% of its Gini coefficient Index (GI) (The World Bank, 2018). The Development Bank of Southern Africa (2012) emphasized the urgency of addressing the inequality gap by noting that South African government needs to invest in the unevenly distributed infrastructure, the main driver of job creation (Development Bank of Southern Africa, 2012). Infrastructure comprises basic energy, ports, public transport, bulk water and sanitation, innovative projects, hospitals, and higher education infrastructure (Presidential Infrastructure Coordinating Commission, 2012). Significantly, when measured physically, infrastructure has a positive effect on the economies of the world, contributing 15% of the Growth Domestic Product (GDP) of the developed economies (Calderón, et al., 2011). The challenge facing the modern-day South African government is maintaining, upgrading, and replacing the now dilapidated infrastructure that was constructed way back in the 19th and 20th centuries, mainly by government entities (The Role of Economic Infrastructure in Economic Growth: Building on Experience, 2011). Furthermore, most South Africans are jostling for limited infrastructural services that were previously reserved for the white minority, thus creating tensions and competition for spaces (The Role of Economic Infrastructure in Economic Growth: Building on Experience, 2011).

Inevitably, anxiety creeps in both government and communities when public services fail to meet the wider citizenry's demands. This, then, leads to service delivery protests that become destructive and violent. While there are ongoing debates around the root causes of the demonstrations, ranging from service delivery-based to politically-motivated, what cannot be contested is that they happen mainly in impoverished settlements (Tsheola, 2012). The overwhelming number of respondents opined that the reasons behind the protests are poor service delivery and lacklustre responses from public officials and public office-bearers when requested to intervene (Akinboade et al., 2013). In believing

it to be the fastest response trigger, South African citizens resort to protesting as a means to communicate with the government (Wasserman, et al., 2018).

In light of the above narration, it is evident that government delivery is not congruent with the clients' expectations of infrastructure's lifetime beneficiaries. More alarmingly, if this misalignment is not addressed urgently, South Africa runs a risk of a total breakdown of trust between government and citizens, leading to zero public infrastructure delivery to communities in any shape or form. To combat this catastrophe, there needs to be a great deal of engagement between the government and the variety of stakeholders directly and indirectly involved in delivering infrastructure projects to South Africa communities.

1.2 Substantiation of the problem

The public sector struggles to engage stakeholders in the process of delivering infrastructure projects to the communities. This is compounded by the challenges caused by clients and consultants and inadequacies on the part of appointed contractors (Mofokeng, 2012). In the instances where stakeholders are consulted, lengthy project documents are not sent to stakeholders prior to stakeholder engagement sessions for proper perusal and familiarisation. This results in sessions being a compliance and tick-box exercise by government representatives (Department of Public Works, 2017). Moreover, project managers have to adhere to their superiors' timelines to the detriment of stakeholder and engagement is generally perceived as time-wasting (Kerzner, 2017).

Notably, communities are getting more vocal and violent in expressing their dissatisfaction with government's lack of engagement, so ignoring them could prove costly, since damaging existing state property is one of the methods widely used by disgruntled communities. Hence, the construction industry faces the pressure of understanding and adapting to the demands posed by society and clients (Wilson & Rezgui, 2013). At the heart of protests in South Africa are the poor communities' grievances against inadequate service delivery by their local municipalities (Swart, 2013). The Project Management Institute recognised this problem's occurrence and duly responded by adding Project Stakeholder Management as their 10th knowledge area (Project Management Institute, 2017). Nevertheless, Bekker and Mashaba (2018) still argue that one of the key causes of failures in construction projects is lack of involving clients and beneficiaries.

The consequences of operating in silos while pursuing a common goal breeds conflict. This results from not engaging other stakeholders when making decisions that affect the whole value chain in the public infrastructure project implementation (Sebola, 2017). Furthermore, the increasing awareness around the impact infrastructure delivery has on the environment makes it impossible for the project to succeed without extensive stakeholder engagement (Rathenam & Dabup, 2017).

1.3 Problem statement

Community stakeholders are not engaged early enough in the delivery of public infrastructure projects, thus resulting in conflicts that provoke end-users to embark on destructive service delivery protests to show their frustration with the lack of engagement. This phenomenon is very costly to the government, which is burdened with having to rebuild damaged infrastructure.

1.3.1 Sub-Problems

The following sub-problems were derived from the problem statement:

- Lack of stakeholder engagement has negative consequences
- Key stakeholders are not identified in the public infrastructure projects
- No determination on how government engages with stakeholders
- No determination of stakeholder expectations with regards to involvement
- Stakeholder engagement is not improving

1.4 Research Aim, Objectives, and Research questions

1.4.1 Aim of the study

This exploratory research aims to analyse lack of stakeholder engagement in delivering public infrastructure projects.

1.4.2 Objectives of the study

From the aim, the following research objectives were identified:

- To identify the consequences of a lack of stakeholder engagement

- To identify the key stakeholders in the public infrastructure projects
- To determine how government engages with stakeholders
- To determine stakeholder expectations with regards to involvement
- To determine how stakeholder engagement can be improved

1.4.3 Research questions

1.4.3.1 Primary research question

The primary research question emanates from the need to address the problem of ***lack of stakeholder engagement***. The research question is as follows:

> How can lack of stakeholder engagement in delivering public infrastructure projects be improved?

1.4.3.2 Secondary research questions

From the primary question, the secondary research questions are identified as:

- What are the consequences of a lack of stakeholder engagement?
- Who are the key stakeholders in the public infrastructure projects?
- How does government engage with stakeholders?
- What are the stakeholder expectations with regards to involvement?
- How can stakeholder engagement be improved?

1.5 Proposition

Emphasis on stakeholder engagement in the delivery of public infrastructure projects improves the project delivery outcome.

1.6 Significance of the study

This study will bring awareness in the public sector regarding stakeholder engagement in delivering infrastructure projects. Addressing lack of stakeholder engagement in the delivery of public infrastructure projects eliminates conflicts that result in end-user unrest.

Engaged stakeholders contribute positively towards the project outcome. As a result of stakeholder inclusiveness, stakeholders are likely to feel more satisfied and engaged in a project (Eskerod et al., 2015). The degree of stakeholder engagement matters immensely in the infrastructure fraternity and, hence, which stakeholders suspect to be derived from tokenism does not sit well with them. Therefore, stakeholders support the participatory framework that uses a collaborative approach since it allows them face-to-face and two-way communication when reaching consensus and resolving project disputes (Jami & Walsh, 2017). Intriguingly, the pro-social values that the internal actors representing the social enterprise (government entity) abandoned tend to find rationale and embracement through stakeholder engagement and thus assist in the creation of social value (Ramus & Vaccaro, 2017).

Stakeholder engagement is a continuous process throughout the project lifecycle. More significantly in conflict-ridden countries, the process is upholding the stakeholder's rights to equal representation (Dubach & Machado, 2012). To create and maintain stakeholder relationships, boundary spanners need to be unleashed through a continuous and participatory collaborative approach that challenges the firmly fixed traditional and adversarial construction practices (Gustavsson, 2015). Further to supporting the anecdote of continuously engaging stakeholders throughout the project lifecycle, the concept of cognitive rationality assists actors in learning to understand the effects of solutions taken and the objectives and possible compromises made during the decision-making sessions, after the outcomes of previously taken decisions, evaluations, and monitoring processes (Cascetta et al., 2015).

1.7 Chapter's Overview

This study consists of five Chapters outlined as follows.

Chapter 1: Introduction and background of the study - this chapter introduces the set to the study and explained the problem statement, aim, and objectives, research questions and significance of the study.

Chapter 2: Literature review – presents other authors' contributions in what has been reviewed regarding stakeholder engagement when delivering infrastructure project.

Chapter 3: Research methodology - discusses the research design and methodology to conduct the study. This included data collection method, sample size, and data analysis techniques. Ethical considerations were presented in this chapter.

Chapter 4: Data analysis and interpretation - analysis and interpretation of data according to the methodology presented in Chapter 3 as evidence.

Chapter 5: Conclusion and recommendations – conclusion to the study, findings and recommendations are covered in this chapter. Limitations and further study are also covered in this chapter.

1.8 Summary

The chapter covered the study's background, substantiation of the research problem, problem statement, primary and secondary research questions, research aim and objectives, and the study's significance. The public sector struggles to engage stakeholders in the process of delivering infrastructure projects to the communities. The aim of this research, therefore, is to address lack of stakeholder engagement in delivering public infrastructure projects. The significance of the study is to bring stakeholder engagement awareness in the delivery of public infrastructure projects.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction to the literature review

This review intends to determine consensus, contradictions, gaps and paradoxes around engaging stakeholders in the execution of public infrastructure projects in South Africa.

This chapter reviewed studies confirming or disputing the notion that extensively engaging stakeholders in public infrastructure projects' delivery eliminates conflicts that provoke communities to destroy infrastructure. Failing to engage stakeholders effectively, in the most part, contributes to service delivery protests that escalate into the South African communities (Ntsala & Mahlatji, 2016). This, therefore, needs to improve; hence, the research will look for recommendations to assist in that regard. Without adequately identifying stakeholders, the project manager would find it challenging to fathom whether the engagement process is comprehensively applied. Henceforth, identifying stakeholders at the initial phases of the project management cycle then becomes a critical component towards eliminating conflicts (Bal, Bryde, Fearon and Ochieng, 2019).

2.1.1 Objectives of the literature review

Public infrastructure projects in South Africa face challenges of non-completion, delayed completion, scope creep, neglect after completion and, most costly, the risk of becoming white elephants (Ntsala & Mahlatji, 2016). Therefore, this literature review aims to identify the world's best practices in literature to fit into the South African context. These practices would eliminate the challenges as mentioned earlier by systematically applying stakeholder engagement principles to improve government-initiated infrastructure projects' success.

This study intends to recommend practical and user-friendly guidelines to assist public infrastructure project managers in South Africa in their everyday engagement with different society stakeholders. The research combines integrative, historical, theoretical, methodological and systematic reviews to provide an un-biased understanding of stakeholder engagement as an integral component of the project management body of knowledge (Saunders et al., 2016).

2.1.2 Methodology of literature review

This literature review relied solely on the internet scholarly search engines for relevant information related to the topic chosen. These ***search engines*** used in searching topics relevant to stakeholder engagement were amongst others, EBSCOHOST Academic Search Premier, Knovel.co, Directory of Open Access Journals, Google Scholar, Sage, Elsevier Science Direct, Springer.com, Primo, Tandfonline.com, etc. To achieve finding articles related to the study topic, the mostly ***search keywords*** used were, Stakeholder engagement, Stakeholder relationship management, Construction projects, Public participation, Community involvement in construction projects, Inclusive governance, Stakeholder satisfaction, etc. All the articles searched have been peer reviewed and mostly have the recency of 5 years.

2.2 Definition of infrastructure project stakeholder engagement as a concept

Stakeholder engagement is consulting individuals, groups, and organisations affected by the project's outcome or can influence that outcome (Rahjans, 2018). This concept's success lies in the stakeholders' conclusive identification to be engaged and analyse their characteristics (Menoka Bal et al., 2013). OECD (2015) warns that excluding other stakeholders because of their opposing views could prove detrimental to the project's outcome. While PMI (2016) provides a comprehensive list of infrastructure project stakeholders, they argue that the level of influence varies because of legislative, cultural, and custom set-ups, thus affecting stakeholder engagement.

2.2 Stakeholder relationships in infrastructure projects

Mok et al., (2017) identify accurate end users' requirements, functionality and resources, and aesthetics as the three major pitfalls that contribute to addressing project stakeholders' complexity. Contrastingly, Yu and Leung (2018) pinpoint the triangular relationship between the stakeholders' power, interest and public engagement (PE) outcomes as the source of complications. The two contrasting observations provide an anecdote that there is no single panacea to address stakeholder engagement's complexity across the board. PMI (2016) refers to the interrelationships between infrastructure project stakeholders as the "primary project complexity enhancers" and provides a typical overview of stakeholder relationships to that effect, as depicted below:

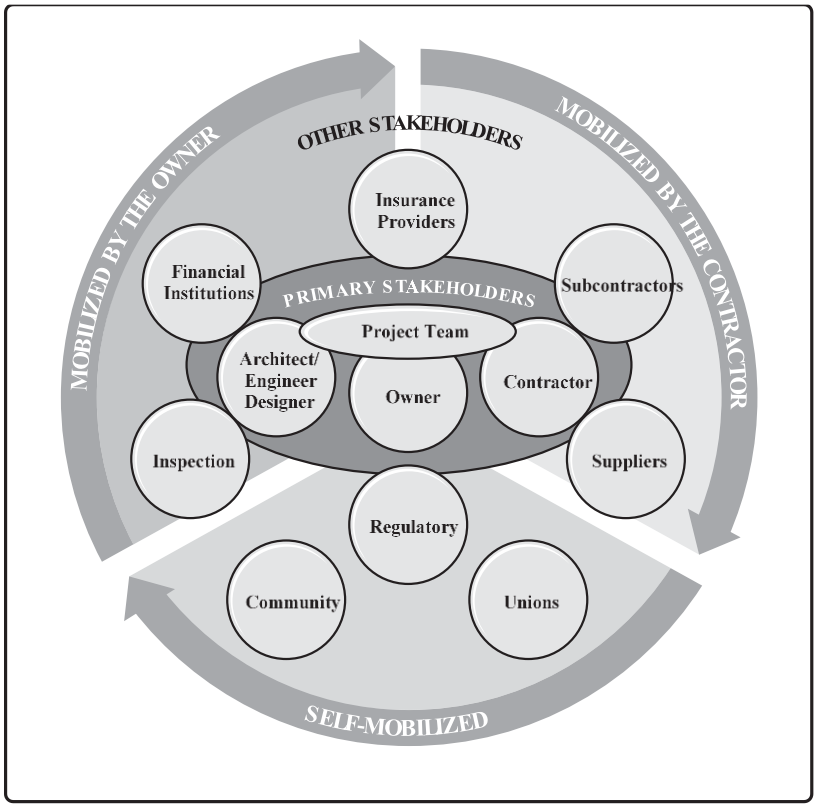


Figure 2.1.: Stakeholder Relationships in Construction Projects (PMI, 2016)

PMI (2016) proposes, as illustrated in figure 2.1, that the project team should develop a plan to manage stakeholder relationships in construction projects to avoid overlapping and duplicating responsibilities. This confusion, if not addressed, may result in communities confronting a contractor about responsibilities the project sponsor should account for. According to Teo and Loosemore's (2017) study, they conceded that while communities are widely recognised as project stakeholders, there is a lack of empirical research to help project managers deal effectively with communities and avoid protests. Teo and Loosemore (2017) further argued that construction project managers are poorly equipped in handling communities as stakeholders and tend to view communities as a project risk. The latter authors propose that construction project managers invest in social capital, developing and maintaining open contacts with community leaders to build trust in the project's early stages. The significance of stakeholder engagement is such an integral part of government construction projects is that even if time, cost and quality suffice, the project would still be a failure if stakeholder relationships fail. To take it further, Nguyen et al. (2009) (in Windapo & Qamata,

2015) argues that stakeholder satisfaction is borne out of the information provided by the project triangle of time, cost, and quality.

2.3 Barriers to stakeholder engagement in the construction industry

While it is natural to attribute inadequate stakeholder engagement to the project manager or project management team's shortcomings, literature has provided another dimension of barriers beyond the project management team's capabilities. Wilson and Rezgui (2013), supported by empirical evidence from studies conducted in Europe and Wales, separated the perceived barriers into two categories, i.e., the individual and organisational barriers. The table below details distinctions between individual and organisational barriers:

Table 2. 1: Individual and Organisational Barriers to Stakeholder Engagement (Wilson and Rezgui, 2013)

Individual Barriers	**Organisational Barriers**
Absence of information about construction practices and principles and data overburden	Absence of enabling support systems as a result of fragmented information sources
Skepticism on the provided project proposition and distrust of the project owner's information.	Training not being provided to relevant stakeholders on up-skilling on the use of provided infrastructure
The assumed threat that comes with a change in lifestyle as a result of accepting the project, i.e., cost of utilising the infrastructure	Tight work schedules and overload that prompt organisations to speed up tasks without due consideration to stakeholder engagement
Fear to rely on new and unfamiliar technology, which tests the individual's literacy level	Inadequate time to reflect on lessons learnt

The study conducted on the Nigerian construction industry by Owolana & Booth (2016) observed that lack of the following: organisation's technological support internally, legal enforcement from

government, trained staff, client support, sub-contractor cooperation, as well as high management and operation costs related to the implementation of Environmental Management Systems (EMS), contribute as the barriers to construction companies adopting the EMS system. These fall under the organisational barriers as detailed in table 1 above. The study by Owolana and Booth (2016) supports the anecdote that project success rests on stakeholders' full buy-in; otherwise, the barriers can potentially ruin the project. The idea of having legal and funding requirements for stakeholder engagement imposed on project implementers finds support in literature (Wachi, 2016). Owolana & Booth (2016) and Wachi (2016) agree in principle that some form of legal enforcement by governments is necessary to impose stakeholder engagement in the implementation of construction projects.

The study conducted on the delivery of Multifarious Infrastructure Projects (MIPs) in Nigeria by Zarewa (2019) identifies 39 barriers to effective stakeholder engagement in delivering public infrastructure projects. Table 2.2 below elaborates on the 39 barriers to stakeholder engagement identified by Zarewa (2019):

Table 2. 2: Barriers to Stakeholder Engagement (Zarewa, 2019)

Barrier	**Elaboration**
Incomplete stakeholder identification	Identifying stakeholders' process is rushed as a tick box exercise rather than a genuine intention to identify stakeholders to engage them.
Late identification of stakeholders	Stakeholders are identified while the project is already underway, resulting in scope creep and revisiting of items due to complaints by stakeholders identified late.

Failure to identify key stakeholders	Failure to identify key stakeholders leads to those stakeholders withdrawing support for a project or staging different kinds of protests.
Failure to recognise adverse stakeholders	Adverse stakeholders are as key as stakeholders supporting the project. Failure to recognise their existence leads to dejection and negative stakeholders often resort to protests if they perceive themselves as excluded.
Language barrier between stakeholders	Due to the language being interpreted differently by people of different dialects, this lack of language cohesion may lead to stakeholder engagement faltering.
Cultural differences between stakeholders	Cultural differences in the social interactions of human kind stem from different belief systems and upbringing. Therefore, making an effort to understand the stakeholders' cultural standing to engage with them is critical.
Uncooperative attitude of stakeholders	There are many underlying factors attributable to stakeholders deciding to be uncooperative towards the project presented to them. Some of these factors could be the choice of contractors appointed to do the work, dissatisfaction towards the implementation of the project, and the feeling of being left out due to lack of comprehensive stakeholder consultation.
Limited stakeholder engagement	Stakeholder engagement is a rushed compliance exercise, rather than engaging stakeholders comprehensively and cooperatively through a participative approach.

Lack of stakeholder engagement	The project is delivered without engaging various stakeholders, resulting in the project being stopped for lengthy periods due to legal disputes or community protests.
Stakeholders' incapacity to participate in discussions	The complexity of public infrastructure projects would often result in stakeholders getting lost in discussions during stakeholder engagement sessions due to lack of training or workshops on the project and its dynamics.
Failure to cooperate with adverse stakeholders	Infrastructure projects attract a lot of adversity due to their nature of impacting the local communities' habitual space, the environmental set-up, etc. This impact would therefore invite a lot of criticism from pressure and human rights groups. Failure to cooperate with these adverse stakeholders could spell disaster to the success of the project.
Inadequate engagement with external stakeholders	External stakeholders are stakeholders outside the institutional environment's formal framework, such as communities, regulatory bodies, etc. (Oppong et al., 2017). External stakeholders feel the project's continuous impact long after its completion; therefore, inadequate engagement with these stakeholders does not auger well for the project's short and long-term success.
Involvement of numerous stakeholders	The involvement of numerous stakeholders demands meticulousness in dealing with different and conflicting personalities.

Assignment of similar task to two stakeholders	Listing and detailed descriptions of tasks assigned to stakeholders is key to avoid giving similar tasks to two or more stakeholders. This could happen due to duplication or giving different names to a single task.
Failure to identify potential conflict areas	It is imperative to identify and analyse project risks frequently. Frequent risk identification and analysis minimise the potential for conflict due to early identification and mitigation thereof.
Failure to assess levels of influence of various stakeholders	Misinterpretation of the level of stakeholder influence could result in sending irrelevant information to various stakeholders.
Failure to understand stakeholders' needs and expectations	To ensure that stakeholder misalignment is avoided at all costs, the onus is upon the project manager to clearly understand and confirm stakeholders' needs and expectations.
Lack of constant communication with stakeholders	Constant communication with stakeholders is key in avoiding impasse long before it materialises.
Lack of open and ongoing communication process	Open and ongoing communication between the project manager and project stakeholders builds strong ties that help propel the success of the project.
Issuance of the same information to all stakeholders	Stakeholders vary in terms of project influence, knowledge and interest, therefore information delivered to them should reflect these variances.
Failure to meet information requirements of all stakeholders	The project manager and team should at all times strive to issue information requested by stakeholders at the most opportune time, and as honestly and transparently as possible.

Issuance of incorrect information to stakeholders	Project managers should never issue incorrect information to stakeholders.
Lack of a person specifically assigned to handle stakeholder engagement	The project management team should assign a dedicated person to deal specifically with stakeholder engagement issues with indicators.
Conflict between stakeholders	Project stakeholders engage in conflict because of not sharing the same view of the subject matter, and this conflict serves as a barrier to the project delivery.
Lack of periodic stakeholder meetings	Periodic stakeholder meetings are necessary for in-time buy-ins and milestone sign off sessions. Lack of these meetings provides a huge barrier to the project success.
Client's uncooperative attitude	Poor cooperation from the client contributes to unnecessary project delivery delays.
Interference in stakeholder engagement by client	Some clients would be tempted to interfere with the processes of stakeholder engagement, resulting in conflicts and accusations of bias.
Project location	Project location could prove difficult to reach out to all relevant stakeholders.
Nature and size of a project	Public infrastructure projects differ in terms of complexity, nature and size. Therefore, project managers need to streamline stakeholder engagement in line with the dynamism that comes with these differences.
Imposition of leadership on stakeholders	Imposing instructions on stakeholders without giving them time to provide feedback on the project-related issues impacts the project negatively.

Inhumane attitude in relating with stakeholders	Treating stakeholders with hostility and inhumanely prompts stakeholders to react with anger.
Failure to engender trust with the stakeholders	A trust deficit between the project manager and various stakeholders leads to a breakdown of communication to the project's detriment.
Lack of fairness and equity for all stakeholders	Treating stakeholders with inequity leads to anarchy from disgruntled stakeholders who perceive themselves as victims of the imbalanced stakeholder treatment.
Failure to understand relationships between and among stakeholders	Therefore, relationships among stakeholders vary; therefore, failure to understand them becomes a huge barrier to effectively engaging stakeholders both collectively and individually.
Absence of a formal stakeholder engagement process	The absence of a formal stakeholder engagement process leads to discretionary and sporadic engagements with stakeholders.
Project manager's poor knowledge of stakeholder engagement	Poor knowledge prompts the project manager to disregard stakeholder engagement as a time-wasting exercise, thus fuelling unnecessary external stakeholder protests and legal disputes.
Lack of continuity in stakeholder engagement process	If stakeholder engagement is done sporadically, stakeholders tend to lose interest. The project management team must stick to agreed timelines of engagement.
Taking over roles from one stakeholder & assigning them to another	This exercise has the potential of harming relationships among stakeholders if not done with due diligence.

2.4 Practical application of stakeholder engagement in construction

In encouraging project implementers, Chinyio & Akintoye (2008) provided a power-interest grid to assess stakeholder influence and engagement level, so that project implementers endeavor to engage all stakeholders instead of focusing on one. The power interest grid was observed from stakeholder engagement in 12 construction companies in the United Kingdom, provide as follows:

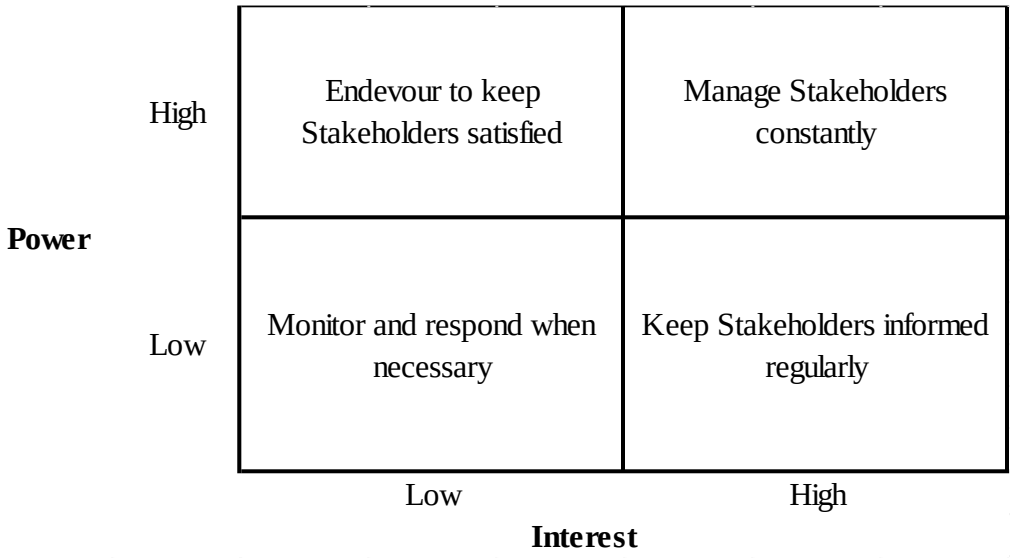


Figure 2. 1: Power-Interest Grid for Stakeholder Assessment (Chinyio & Akintoye, 2008)

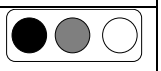
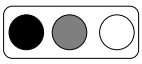
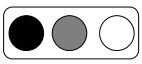
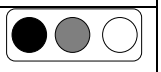
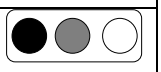
Figure 2.2 assists with communicating relevant information to relevant stakeholders and avoids bombarding stakeholders with the information they do not need. However, like most literature approaches, this approach does not get close enough to the "how" part of engaging stakeholders.

One needs to note that the world faces major disruptions in government-funded construction projects because of inadequate stakeholder engagement, more specifically with local communities who are the end-users. Therefore, the South African government needs to develop and endorse a legal document to resolve stakeholder engagement's inadequacy.

In supporting this narrative, Cleland (2002) in Chinyio & Akintoye (2008) proposes that a formal approach to project stakeholder engagement needs to be developed. PMI (2016) also proposes possible actions to monitor and control stakeholder engagement in construction projects, and still

found lack of detail. Quite interestingly, the study conducted by the Organisation for Economic Co-operation and Development (OECD) (2015) also points to lack of legal frameworks on stakeholder engagement as an obstacle, hence the reason there is no minimum standards developed for compliance. However, OECD (2015), in their research on stakeholder engagement for inclusive water governance, provided a monitoring tool to fit the requirements of each project and location. Table 2.3 shows the extract as provided by OECD (2015):

Table 2. 3: Selected Tools and Practices (OECD, 2015)

Indicators	
The entity has stakeholder engagement requirements in place	
Stakeholder advisory groups have appropriately been established at strategic levels of government, reflecting the broad range of interests with equal representation	
Fairly balanced ground rules for engagement have been explicitly defined	
A business case has been developed to support stakeholder engagement	
Compliance reporting against existing requirements is documented appropriately	

While there seems to be not much literature supporting stakeholder engagement's practical application, several public documents are specifically designed to standardise stakeholder engagement in different entities across the globe. International Finance Corporation (2007) produced a comprehensive handbook that outlines the guidelines around which stakeholders could best be engaged throughout the project cycle. The handbook covers all project stages from concept to decommissioning and divestment. The International Finance Corporation (2007) developed an internal stakeholder engagement monitoring tool for the construction stage of the project lifecycle as shown in Table 2.4

Table 2. 4: Stakeholder Engagement Tool *(International Finance Corporation; World Bank Group, 2007)*

Activity	**Further Clarity**
Identify parties the construction is likely to impact.	After project design is completed and work packages agreed upon with the contractor, a better picture of the construction work's parties is painted. Ensuring that these parties have been identified and their concerns taken seriously should be top priority prior to project commencement.
Inform locally based stakeholders of the type of construction work to be performed and variations to schedules.	Various nuisances caused by construction work may pose a physical or health hazard to the people residing in the vicinity of the project site. Notify public of the start date and duration, the purpose and nature of construction activities, and who to contact regarding concerns and complaints.
Organise staff to liaise with local communities as soon as possible.	Regular visits by representatives of both the project owner and the main contractor before construction commences is good practice.

The monitoring tool above aligns perfectly with the "10 principles of stakeholder engagement" developed by the Association for Project Management (2019). The 10 principles of stakeholder engagement are:

"1. Communicate, 2. Consult early and often; 3. Remember, they're only human; 4. Plan it; 5. Relationships are key; 6. Simple, but not easy; 7. Just part of managing risk; 8. Compromise; 9. Understand what success is; and 10. Take responsibility."

While the United Kingdom and Finland are countries widely credited with embracing stakeholder engagement, developing countries are still struggling to fully capitalise on stakeholder engagement benefits due to not having historical documentation as a reference point (Eiyah-Botwe et al., 2016). Let us now closely look at the model of public infrastructure stakeholder engagement for both the United Kingdom and Finland, and later look at the South African model:

2.5 Public infrastructure stakeholder engagement in Finland

Government projects influence external stakeholders in the form of local communities and regulatory bodies. The difference between internal stakeholders and external stakeholders is that internal stakeholders have a contractual and official link to the project while, in contrast, external stakeholders do not have that link (Lehtinen & Aaltonen, 2020). Nevertheless, for the stakeholder engagement process to work effectively, internal stakeholders hold the responsibility for organising stakeholder engagement with external stakeholders (Lehtinen & Aaltonen, 2020). Lehtinen & Aaltonen (2020) studied three solutions through which infrastructure stakeholder engagement can be organised, i.e., governance-based, value-based, and dynamism-based.

The governance-based solution focuses on the activities that provide a platform for engagement, such as information-sharing gatherings and external stakeholders' workshops on the project details. A governance-based solution further draws out stakeholder engagement indicators against project objectives (Lehtinen & Aaltonen, 2020). Once external stakeholders understand the project objectives and performance-measuring indicators are clearly set, the next and final phase of the governance-based solution is the allocation of tasks and the appropriate rewards to those external stakeholders who participate in one or more forms of remunerative work in the project.

The value-based solution provides a value-based solution in collaborating with external stakeholders towards working together for a common goal (Lehtinen & Aaltonen, 2020). Therefore, the end-goal for value-based solutions is for external stakeholders to see value in a project the same as internal stakeholders do, thus laying the foundation for external stakeholders to internalise project values and play an advanced role in fighting for the success of the project.

The dynamism-based solution strives to provide timely feedback on the project's day-to-day operations to external stakeholders and provide enough flexibility on the project roles to reduce arguments among stakeholders to the bare minimum (Lehtinen & Aaltonen, 2020).

Therefore, it can be deduced that the three solutions for organising infrastructure stakeholder engagement serve as catalysts for a healthy working relationship between internal and external stakeholders on infrastructure projects. Oppong et al. (2017) emphasises that proactive planning of roles and responsibilities is key to the stakeholder engagement process's success in public infrastructure projects.

Ziessler et al., (2013) opines that the main driving force behind stakeholder engagement in Finland was the "Uranium Conflict" back in 1995 that emerged in the mining industry between local communities and mining explorations for mining uranium. Ziessler et al. (2013) further states that the mining exploration companies started to embrace the concept of Social Licence to Operate (SLO) to reduce risk to their businesses and address sustainability and social issues. The Social Licence to Operate exists when the local communities approve the mining project to operate in the area (Gehman et al., 2017).

Jetoo (2019) noted that Finland's city of Turku, located in the southwest of Finland, with a population of 184 000 people, embarked on a major stakeholder engagement drive when unveiling their climate plan to be carbon neutral by 2029, in line with the European Union's (EU) Sustainable Energy and Climate Action Plan (SECAP). In 2008, the European Commission launched a Covenant of Mayors "2020 Target" initiative, following the adoption of the 2007 EU Climate and Energy Package, in supporting the efforts by local authorities under the jurisdiction of the European Union to lower their carbon emissions in the future (Bertoldi et al., 2018). The European Union subsequently developed a Sustainable Energy and Climate Action Plan (SECAP). SECAP defines mitigating and adapting to climate change by converting long-term strategies into action by assigning responsibilities and clear timeframes (Bertoldi et al., 2018). One of the critical elements of SECAP is building support from stakeholders and garnering citizenry participation (Bertoldi et al., 2018). According to Hernández-González and Corral, (2017) have found in their study that, Stakeholder engagement should be carried out from the very first steps of the planning process until the end to have a successful

planning. The European Environment Agency (2016) posits that deeper engagements with stakeholders provide better value than consulting stakeholders only for their opinions.

Here is a list of potentially important stakeholders in the context of a SECAP as provided by Bertoldi et al. (2018):

- Local authority - relevant municipal departments and companies (municipal energy and water utilities, transport companies, etc.) (2.5.1)
- Local and regional energy agencies (2.5.2)
- Representatives of national/regional/provincial administrations and/or neighbouring local authorities to ensure coordination and consistency with plans and actions that take place at other levels of decision (2.5.3)
- Financial partners such as banks, private funds, insurers (2.5.4)
- Institutional stakeholders like chambers of commerce, chambers of architects and engineers (2.5.5)
- The building sector: building companies, developers, housing authorities (2.5.6)
- Transport/mobility players: private/public transport companies, etc. (2.5.7)
- Energy suppliers, utilities (2.5.8)
- Water supplies utilities (2.5.9)
- Business and industries (2.5.10)
- Civil protection (e.g. police and fire departments) (2.5.11)
- NGOs and other civil society representatives' including students, workers, etc. (2.5.12)
- General public (e.g. residents) (2.5.13)
- Knowledgeable persons (e.g. consultants) (2.5.14)
- Existing structures (2.5.15)
- Universities, schools and research centres/institutes (2.5.16)
- Hospitals/emergency services (2.5.17)
- Tourists and tourist industry, where appropriate (2.5.18)
- Agricultural community, where appropriate (2.5.19)
- Port authority and/or coast guard, where appropriate (2.5.20)

- Media (2.5.21)

The city of Turku adopted a decentralisation-focused model termed ‘participatory governance’ on its mission to include external stakeholders in its decision-making processes. Participatory governance is the process of engaging the public sector, private sector, civil society and the general public in making decisions, using varying communication methods, while advocating for the delegation of decision-making responsibility to the participants of the engagement session (Kochskämper et al., 2016).

For communication to have a desired impact, the message to be transmitted must be clearly specified and the intended outcome must be meticulously anticipated. Indicators for evaluating the impact of communication must be set, and specifying the most appropriate communication channel for engaging with each one of the key stakeholders is of utmost importance (Bertoldi et al., 2018). It is noted, however, that the committee that sat to prepare the city of Turku Climate Plan 2029 decided to exclude stakeholders since it was made up of only the officials from the city of Turku, and their closed-door boardroom meeting took one week to complete. For a city of 184 000 residents, it is difficult to fathom that this small group of officials represented the whole local authority’s constituency (Bertoldi et al., 2018), which brings forth the issue of transparency into question. The city of Turku Climate Plan 2029 apparently falls short of Sustainable Energy and Climate Action Plan’s (SECAP) stakeholder participation guideline as depicted on the table below:

Table 2. 5: Stakeholder Participation (Bertoldi et al., 2018)

Nature of Involvement	**Tool**
Information and Education	Brochures, newsletters, social networks, advertisements, exhibitions, site visits
Feedback	Telephone hotline, website, public meetings, teleconferences, surveys and questionnaires, staffed exhibitions, deliberative polls
Consultation	Workshops, focus groups, forums, open house
Extended Consultation	Community advisory committees

Bertoldi et al., (2018) posits that stakeholder engagement was limited in the development of the city of Turku Climate Plan and did not meet all the requirements of the Sustainable Energy and Climate Action Plan (SECAP).

2.6 Public infrastructure stakeholder engagement in the United Kingdom

In analysing the United Kingdom's Cross Rail project at Paddington Station, Doloi et al., (2016) noted that the degree of stakeholder participation of key project actors such as the local authority, the project sponsor, delivery agents, industry partners and utility companies was high. In addition, these stakeholders took the central role in the critical project-related issues (Doloi et al., 2016). The alignment of strategic project objectives with the public's needs and expectations was clearly noticeable (Doloi et al., 2016). The concept that analyses beyond the formal institutional set-up of stakeholder engagement and looks at stakeholders in a network environment is called Social Network Analysis (SNA) (Doloi et al., 2016). Social Network Analysis looks out for relational links among stakeholders based on their preferences and characteristics, which helps minimize conflicts, consensus building, and proper allocation of resources (Doloi et al., 2016). Social Network Analysis uses different tools to monitor interactions and relationships in a particular environment (Saqr & Alamro, 2019). SNA studies the interdependency of actors inside a social network system around a single source of interaction, using arrows to depict the points of interaction (Saqr & Alamro, 2019).

To study the characteristics of actors in a social network, Doloi et al., (2016) use such parameters as Degree Centrality, Betweenness Centrality and Eigenvector Centrality. Sharma and Surolia (2013) define Degree Centrality as the centrality strength of a node based on the number of connections. Betweenness Centrality measures a vertex's influence on the transmission of information with an assumption that information flows quicker and most effectively between the shortest paths (Unnithan et al., 2014). Eigenvector Centrality measures each node's significance in the allosteric process of a network (Negre et al., 2018).

Studying the three parameters of Degree Centrality, Betweenness Centrality and Eigenvector Centrality under the tutelage of Social Network Analysis helps understand individual actors' perceptions around stakeholder engagement and their interests noticeable by the interactions they have within the social network. The latter leads the project management team to appropriately

collaborate with different actors (Doloi et al., 2016). In a stakeholder engagement process, Degree Centrality points to the degree of connectivity the actor exudes, signifying the kind and number of people the actor is directly connected to. On the other hand, Eigenvector Centrality signifies the amount of influence the actor possesses. Actors with high Eigenvector Centrality have the ability to associate themselves with influential individuals and have the power to create expectations that other actors seamlessly relate to (Doloi et al., 2016). Betweenness Centrality is one indicator that coordinates activities and its power lies in its brokerage capacity. An actor with a high Betweenness Centrality manages to influence decisions by providing information that could delay or change the project outcome (Doloi et al., 2016). Due to stakeholders' heterogeneous nature in the public infrastructure projects, it is of great importance to make efforts at trying to accommodate all stakeholders right from the design and planning stages of the project. This type of engagement, while daunting, saves the project from costly and destructive stoppages that mushroom as a result of poor consultation with stakeholders, especially local communities (Doloi et al., 2016). The success of the UK's Cross Rail project at Paddington Station was achieved largely due to its extensive use of stakeholder engagement practice utilising Social Network Analysis.

The United Kingdom is working hard at moving away from the concept of stakeholder management to a more two-way concept of stakeholder engagement, where stakeholders play a more proactive role (Ehwi, 2019). The distinction between the two concepts can be depicted in the following figure:

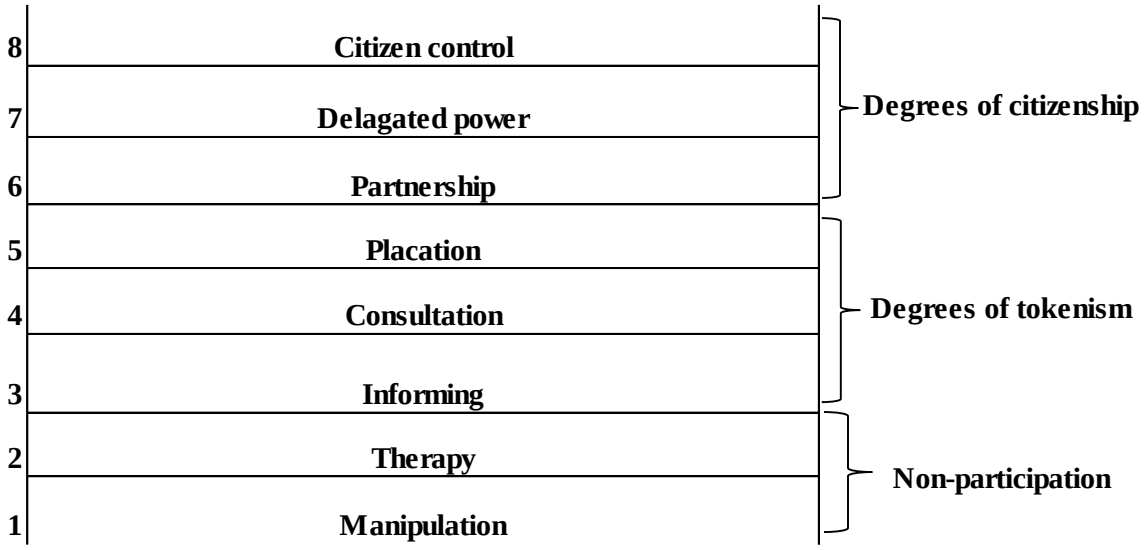


Figure 2. 2: Arnstein's Ladder of Participation

Figure 2.3 can be further postulated in the following manner:

- 1 to 2 represents a situation where there is no participation of stakeholders in the decision-making process of the project (non-partisan)
- 3 to 4 illustrates a range where stakeholders are engaged for the sake of informing them as a form of compliance, falling within the conduit of stakeholder management (degree of tokenism)
- 6 to 8 represents a region where stakeholders are urged to provide their own input on a project, a point where stakeholders' inputs are capable and allowed to change the scope of the project (degree of citizen power).

Ehwi (2019), in the West Cambridge Digital Twin Project analysis at the University of Cambridge, posits that stakeholder engagement should not be limited to the stakeholders the government agency deems to be relevant. Still, stakeholder engagement must be open-ended to allow those stakeholders mistakenly left out to be engaged as and when the opportunity avails itself, seamlessly allowing a continuous stakeholder engagement process throughout the duration of the project.

Ehwin, (2019) suggested the following table to reach out to as many stakeholders as possible on the West Cambridge Digital Twin Project:

Table 2. 6: Stakeholder Engagement at West Cambridge Digital Twin Project (Ehwi, 2019)

Type of Engagement	Targeted Stakeholders	Primary Purpose
Short Term Stakeholder engagement		
A website providing access to all social media platforms	All stakeholders	To provide information about the West Cambridge Digital Twin Project in detail
Posters at all places of public gatherings around West Cambridge	All stakeholders	To provide the most critical information about the West Cambridge Digital Twin Project and directing targeted audience to URLs and QR codes
Face-to-face meetings	University representatives, Heads of Departments, Information Compliance Officers, Estate Officers, University Accommodation Officers	To give information about the West Cambridge Digital Twin Project and allow feedback and inputs from the stakeholders
Bespoke emails	Departmental administrators, staff, students and residents of premises at West Cambridge Site	To provide latest update on the project progress and provide a platform for inputs and feedback
Scheduled follow-up sessions	All stakeholders	To provide updates and clarity on issues not clearly understood at formal meetings
Medium Term Stakeholder Engagement		
Interactive video displays at high traffic areas	All stakeholders	To provide latest project progress on video clips and

		allow users to give feedback on the interactive computer command buttons
Focus group sessions	All stakeholders	To allow stakeholders to air their concerns and suggestions on issues pertaining to the smooth running of the project
Workshops and collaborative sessions	All stakeholders	To workshop stakeholders on the best utilisation of the project and receive feedback and suggestions from stakeholders

Source: Ehwi (2019)

The table above illustrates the project management team's commitment to fostering a lasting relationship with all stakeholders of the West Cambridge Digital Twin project. To recognise people as taxpayers and thus put them at the centre of the public infrastructure projects has many benefits and is widely acknowledged (Fernandez-Anez et al., 2018). However, stakeholders either pose a risk to the project or pose a risk to other stakeholders. This means that common ground must be reached to get to a level where the project's implementation benefit both the project sponsor and the project end-users without hugely disadvantaging either party (Ehwi, 2019).

The efforts taken by both the United Kingdom and Finland at improving stakeholder engagement have been well acknowledged in the above analyses. These two countries are renowned for embracing the concept of stakeholder engagement (Eyiah-Botwe et al., 2016), yet they are still experiencing stakeholder engagement challenges at different levels of the project management cycle. This, therefore, suggests that there is still a lot of ground to be covered by the construction industry to fully embrace stakeholder engagement as a critical concept in the delivery of public infrastructure projects.

2.7 Public Infrastructure stakeholder engagement in South Africa

In South Africa, Square Kilometre Array (SKA) (SKA, 2018) developed a stakeholder monitoring tool for its stakeholder engagement programme. The tool was developed from Axelos' Managing Successful Programme (MSP). SKA (2018) lays it out in a cyclical format, and labels it SKA Office Stakeholder Engagement Cycle, however, the cyclical tool was found to be too broad for day-to-day use in a construction set-up. A further review was done on the stakeholder engagement plan for the Mokolo/Matlabas Catchment and Crocodile (West) and Marico WMA classification project as published by the Department of Water Affairs (Republic of South Africa, 2013). The department adopted the communication plan format and the document outlines events and the Count of those events. Still, the latter document is not fully equipped to operate as an infrastructure project stakeholder engagement monitoring tool. Aghimien et al. (2019) argues that stakeholder engagement in the South African Construction Industry (SACI) falls short of adequately identifying key stakeholders for a construction project. Failing to adequately identify stakeholders for a public infrastructure project leads, therefore, to disgruntlement on the side of stakeholders left out, and thus gives rise to project delays and disruptions (Doloi et al., 2016).

South African government established the Construction Industry Development (CIDB) as a Schedule 3a public entity entrusted with leading construction industry stakeholders in construction development (CIDB, 2021). This entity was established in terms of the CIDB Act 38, 0f 2000. The five core objectives of the CIDB are:

- uniformity in construction procurement (2.7.1)
- efficient and effective infrastructure delivery (2.7.2))
- construction industry performance improvement (2.7.3)
- development of the emerging sector, including industry transformation (2.7.4); and
- skills development (2.7.5)

CIDB is an agency of the Department of Public Works under the Executive Authority of the Minister, and all the strategies and plans of CIDB are approved by the Department of Public Works (CIDB, 2021). Since all public infrastructure and immovable assets are under the custodianship of the Department of Public Works, the infrastructure delivery strategies adopted by all government

departments should be in line the CIDB strategies, as approved by the Department of Public Works (CIDB, 2021). To assist all government departments to engage stakeholders extensively when delivering public infrastructure projects, CIDB developed a standard called "Standard for Contract Participation Goals for Targeting Enterprises and Labour Through Construction Works Contracts" (CIDB, 2017). The standard provides guidelines for community engagement on government-sponsored infrastructure projects, prescribing on the roles and responsibilities of a Community Liaison Officer (CLO) on a project (CIDB, 2017). The main limitation of this standard is its focus on targeted enterprises and labour inclusiveness. The standard's main target is the balanced participation of local labour and enterprises and ensuring that communities are extensively consulted, thus fulfilling the social aspect of the project. However, the community engagement aspect of the CIDB standard is more on poverty alleviation by creating employment through projects and balancing opportunities than onsite project-specific stakeholder engagement. It can, therefore, be deduced that South Africa, like all many other developing economies, still has some ground to cover to fully embrace stakeholder engagement as an integral part of project management.

2.8 Stakeholder Engagement on Hospital Infrastructure Projects

The most crucial aspect in the implementation of hospital infrastructure projects is to maintain fast and unhindered flow of patients at all times ((Pandey, et al., 2017). Hospital infrastructure comprises of Information and Communications Technology (ICT), Heating, Ventilation, and Air-Conditioning (HVAC), medical gas infrastructure, electrical supplies, water reticulation, sewer reticulation, security systems, access roads infrastructure, medical equipment, fire alarm systems, firefighting equipment, steam boiler reticulation system, landscaping, over and above the construction and maintenance of the physical building structures and engineering services (Halmi & Saleh, 2019). The four factors affecting end user satisfaction as noted on the case study of the two Malaysian hospitals, Pantai Hospital Manjung and KPJ Specialist Ipoh hospital, are the maintenance management staff's lack of knowledge for hospital building, time taken to execute works takes longer due to limited staff, delayed response to complaints, as well as lack of supervision (Halmi & Saleh, 2019).

A four-year study of the National Health Service (NHS) hospital construction projects in the UK laid bare the diversity of interests to be taken into consideration when executing ng such projects

(Collinge, 2016). Effectively, Collinge (2016) posits, a hospital needs to incorporate a construction project activity into the day to day healthcare activities, adding pressure on the hospital's stakeholder management response, considering that the hospital has diverse stakeholder interests comprising of clinicians, patients, visitors and community groups. Add to that list the stakeholders brought to the hospital by the construction project in the form of Engineers, Architects, Designers, Planners and the Contractor. The hospital staff's lack of experience with construction work further adds to the stakeholder engagement challenge and the communication thereof, while the construction project is underway (Collinge, 2016). As evidenced in the construction of a new fire exit points on an existing hospital wing of the Royal Sussex County hospital, where new openings on the existing brickwork needed to be made on seven separate floors of an operational facility, patients, clinicians, nurses, facilities management staff and hospital visitors were directly affected by this project, and needed to be consulted extensively to allow for the less disruptive impact of the project (Ehwi, 2019). Moreover, as construction work occurred in the vicinity of sick patients in their beds, the impact of noise and dust was remarkable. To mitigate against this disruption, the construction team, in close consultation with the hospital representatives and clinicians, established extensive communication and planning procedures that prioritised moving patients out of the area of construction activity and decant them to other buildings. Where it was impossible to move patients, the construction project and hospital teams developed a 10-week programme of construction activity that involves communication (through notices) to clinicians provided five days prior to the commencement of construction works, cordoning off the construction area to minimise the impact of dust and noise (Ehwi, 2019). While the unavailability of stakeholder engagement was evident at the beginning of the project, clearly understanding the effect of construction activity on hospital services later on was an important principle driving forward stakeholder management work. Prior to work commencing, visits would be made to reassure patients and staff and to agree on steps to be taken to minimise disruptions. These included the requirement for contractors to use existing fire exits to minimise movement through wards, to announce their presence when access to clinical areas was required, wearing of overshoes to stop dust transmission, the use of partitions in wards and the regular monitoring of work areas through daily visits. Follow up visits were done after the project completion to confirm satisfaction of the hospital staff with the work done. Empathy with the needs of

stakeholders and co-operating with hospital staff through close collaboration contributed to an effective stakeholder management strategy (Collinge, 2016).

The following is the Client Relations tool used at Royal Sussex County hospital to improve stakeholder engagement:

Table 2.7: Client Relations Tool at Royal Sussex County hospital (Collinge, 2016)

Client Relations Tool	Description
Monthly Meetings	Meetings between client and service provider where project progress communication is facilitated, updates of work done and discussions of upcoming activities.
Look Ahead Programme	A Look Ahead programme predicted and pre-empted high impact stakeholder management work, the frequency of meetings depending on the scale of work being undertaken.
Behaviour expectation cards	"Behaviour Expectations" were issued to contractors working on site, reinforcing the standards expected of site workers (e.g. use of designated access routes; courtesy towards staff; importance of patient privacy; good housekeeping
Complaints/queries database	Complaints/queries about construction activity from stakeholders were logged into a database; a project helpline and website being set-up for communication.
Contact photo sheet	Photos and contact details of construction personnel were displayed within the hospital.
Notification of Works bulletin	A Notification of Works Bulletin was circulated for each project impacting the hospital. It was

	displayed on staff notice boards and the construction website.
Handouts & comment cards	Given to visitors by hospital security

Source: Collinge (2016)

The table above depicts the stakeholder management strategy adopted by Royal Sussex County hospital to deal with the challenges of undertaking construction work inside a live, fully functional hospital (Collinge, 2016). The strategy named "Client Relations Tool" was developed specifically to deal with the issues pertaining to stakeholder engagement and satisfaction. The monthly meetings tool provides a platform where stakeholders reflect on the work done and lessons learnt, and then look into the work ahead to plan accordingly. A Look Ahead Programme tool presents the list of upcoming construction activities and prompt the construction team to schedule the frequency of stakeholder liaison meetings according to the impact the construction activity would have on the clinical area. Behaviour expectation cards were issued by the hospital representatives to the contraction team enlisting the ground rules on how construction workers are expected to behave when working in the clinical areas, such as using designated access routes, good housekeeping, and regard for patient privacy. Complaints/queries database was set up for stakeholders to register their complaints or queries on issues directly emanating from construction activities. The contact photo sheet tool assisted the hospital in identifying and having records of all construction workers to mitigate against any illegal activities that might be attributed to such workers. Notification of works bulletin tool helped the hospital to plan accordingly and decant patients in time to allow construction work to proceed. Handouts and comment cards were given to hospital visitors to keep them informed and to allow them to provide inputs on the ongoing construction activities inside the hospital.

West Hospital, in Singapore, is an integrated healthcare development comprising a 2-level basement, a 12-story community hospital block, a 16-story regional hospital block and an 8-story specialist outpatient clinic block that had a 14% 6-month budget overrun from the original cost of 700 million US Dollars to a final cost of 800 million US Dollars, due in large part to additional requirements from stakeholders (Ling & Li, 2019). Such costly additional requirements can be attributed to the presence of "periphery stakeholders", raising tedious demands that result in conflicts difficulty in managing stakeholders (Ling & Li, 2019). To mitigate against such ever increasing requirements,

due diligence should be applied when selecting stakeholders that should attend meetings and take decisions.

2.9 Stakeholder Engagement on Hospital Infrastructure Projects in South Africa

The National Digital Health Strategy (National Department of Health: Republic of South Africa, 2019) is a document developed by South African National Department of Health to provide strategic interventions for ICT infrastructure at the South African public hospitals to:

- Establish a health network to provide digital health broadband connectivity, in conjunction with the relevant government departments
- Establish a cloud service for health
- Conduct a Health Information Systems (HIS) baseline assessment across the health to determine what infrastructure is available, broken, location (levels of care), functionality and connectivity.

National Department of Health: Republic of South Africa (2019) provides strategic interventions for stakeholders in what the document terms "multi-stakeholder engagement". The table below illustrates the stakeholder engagement interventions by National Department of Health: Republic of South Africa (2019):

Table 2.8: Digital Health Stakeholder Interventions (National Department of Health: Republic of South Africa, 2019)

Strategic Interventions for Stakeholders
a. Establish effective collaboration mechanisms between public and private sector stakeholders to build cost-effective digital health solutions, reduce data costs and build better ICT infrastructure for digital health. b. Create a standard schedule of regular engagement with all stakeholders, particularly users, to get buy in. c. Establish a model for co-creation of clinical applications in line with the principles of user experience design.

d. Participate in global and national digital health dialogues to exploit the fourth industrial revolution for Universal Health Care (UHC). e. Create working groups and establish digital health innovation focal points at universities and parastatals to keep abreast with developments and user challenges.

National Department of Health: Republic of South Africa (2019) presents the table above with strategic interventions that still need to be crystallised at an operational level for practicability by project implementers and project stakeholders respectively. It would, therefore, be concluded that while the interventions are relevant to stakeholder engagement improvement, further documents need to be developed for the National Department of Health in South Africa to comprehensively respond to the lack of stakeholder engagement in the public hospital infrastructure projects. The exploratory case study done on a completed public hospital in East London, South Africa has revealed that proper briefing processes were not done, depriving end-users to have their requirements comprehensively captured, add their final inputs to the specification and design by consultants, and thus resulting in higher end-user satisfaction on the construction of a health care facility (Windapo & Cloete, 2017).

It can be concluded, after extensive academic research searches, that there is limited literature in South Africa that focuses on hospital infrastructure projects, both public and private, hence limiting this study with regards to South African hospital public infrastructure stakeholder engagement.

2.10 Key Findings of the Literature Review

The key findings of the literature reviewed can be summarised as follows:

- Public infrastructure projects need a participatory collaborative approach that should continuously take place throughout the project lifecycle (Gustavsson, 2015).
- There is a lack of regulation governing stakeholder engagement in public infrastructure projects, leaving stakeholder engagement as an afterthought exercise left at the project manager's discretion, hence frustrating clients (Owolana & Booth, 2016).
- Individual and organisational barriers that go beyond the project team's capabilities contribute to the shortcomings of stakeholder engagement. These range from threats the project evokes

to the local communities' current well-being to tight work schedules the employer imposes on the project team (Wilson & Rezgui, 2013).

- PMI (2016) refers to the interrelationships between infrastructure project stakeholders as the "primary project complexity enhancers", and the attempt to address this complexity is done through the power-interest grid (Chinyio & Akintoye, 2008).

This literature review's objective was to identify the world's best practices in literature to fit into the South African context. Some practices and guidelines were observed as adoptable to localise for utilisation in the South African environment. Many authors view the stakeholder engagement concept regulation as the factor that would improve stakeholder relationships in the infrastructure fraternity.

Governments' call to impose regulations on stakeholder engagement remains relevant, since it allows for construction companies and social enterprises to plan and budget for stakeholder engagement accordingly. Therefore, the research will seek empirical evidence to complement the findings on the literature review and aim at applying the practical aspect that would be usable to benefit all stakeholders in the project implementation process.

2.11 Conceptual Framework

A conceptual framework is a tool used to represent the expected relationship between two variables of a study (Boaz et al., 2018). The conceptual diagram below will be used to establish the causality of stakeholder engagement processes in improving the delivery outcome of public hospital infrastructure projects.

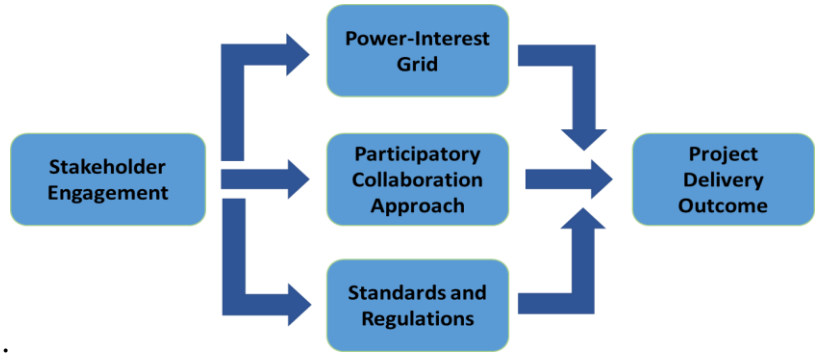


Figure 2.4: Conceptual Framework

The conceptual framework above represents the relationship between two variables, the independent variable as “stakeholder engagement” and the dependent variable being “project delivery outcome”. The “power-interest grid”, “collaborative approach” and “standards and regulations” represent mediating variables between independent and dependent variables. Mediating variables explain and guide the relationship between independent and dependent variables (Saunders et al., 2016). PMI (2016) refers to interrelationships between infrastructure project stakeholders as the “primary project complexity enhancers”, which could be interpreted as meaning that stakeholders, as individuals, have different expectations on the project outcome, hence adding complexity to the project. It is for this observation that the “Power-Interest Grid” suggested by Chinyio & Atikonye (2008) serves as one of the mediating variables between stakeholder engagement (independent variable) and project delivery (dependent variable). The Power-Interest Grid categorises stakeholders according to the degree of power and interest they command in a project, assisting the project team to balance the frequency of communicating project updates to stakeholders. This calculated stakeholder engagement helps to improve project delivery by spending less time on engaging with stakeholders showing less interest or commanding less power.

The second mediating variable is the “Participatory Collaborative Approach” that should continuously take place throughout the project lifecycle (Gustavsson, 2015). Participatory collaborative approach is the process of having participatory sessions with all relevant stakeholders prior to taking a project-related decision that impacts the project outcome (Gustavsson, 2015). The third mediating variable to ensure that all stakeholder engagements in a public infrastructure project delivery are not discretionary, but follow a prescribed guideline, is the provision of “standards and regulations” that guide public infrastructure project implementers on how stakeholder engagements should be implemented.

The conceptual framework outlined above demonstrates the guiding relationship between the two variables, stakeholder engagement a project delivery outcome, and that how the project delivery outcome is depended on the changes applied on the independent stakeholder engagement variable.

2.12 Summary

This chapter presented a comprehensive literature review related to stakeholder engagement in the infrastructure projects. The chapter centred around the definition of the infrastructure project stakeholder engagement concept, objectives of the literature review, methodology of literature review, stakeholder relationships in infrastructure projects, barriers to stakeholder engagement in the construction industry, practical application of stakeholder engagement, key findings of the literature review, and finally outlining the conceptual framework based on the findings of the literature review. The next chapter details the methodology applied to carry out the study.

CHAPTER 3: RESEARCH DESIGN

3.1 Introduction

Research design is a comprehensive strategy that seeks to coherently integrate different study elements to address a research problem (Kirshenblatt-Gimblett, 2006). This chapter will provide a detailed meaning to each study's different elements included in each section. The section focuses on the research philosophy and approach, population and sampling, development of the research instruments, data collection method and protocols, ethical consideration, risk and mitigation strategy, including validity and reliability of the data collection tool.

3.2 Research philosophy and approach

A research philosophy is the way in which data about a phenomenon should be gathered, analysed and used, whereas research philosophy is the detailed procedure of data collection (Saunders et al., 2016). The figure below provides the philosophy and approach adopted in this research for the purpose of data collection:

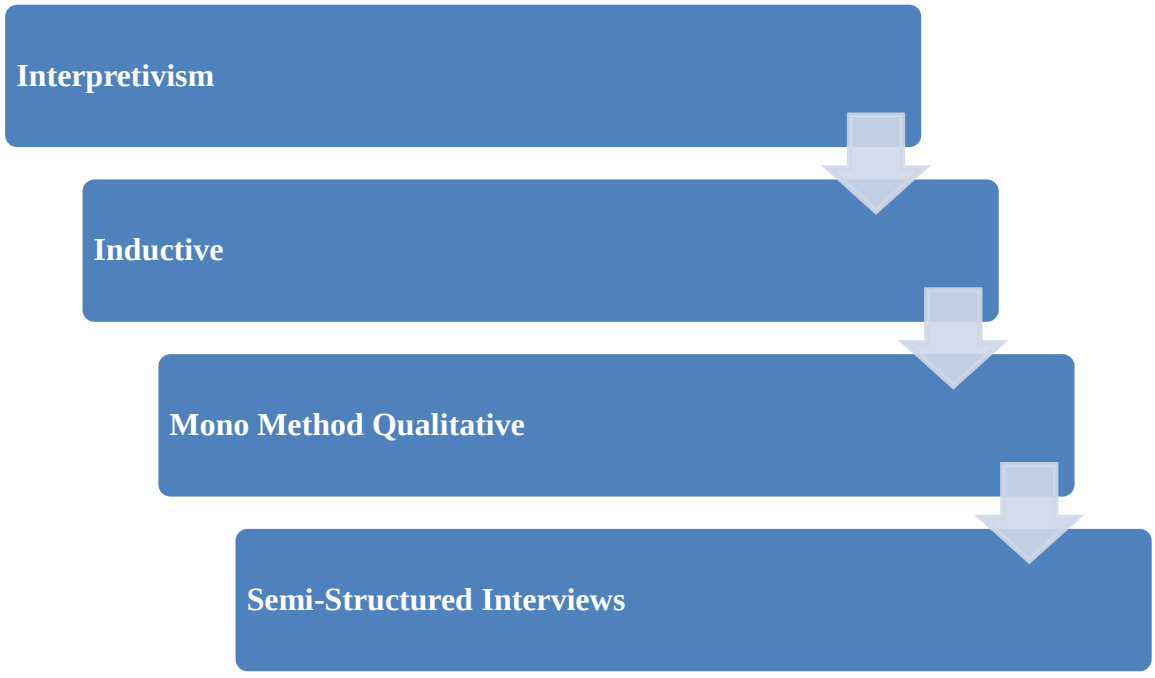


Figure 3. 1: Research Design Flow Diagram

Interpretivism, as referred to in figure 3.1, is the philosophy guiding this research, rooted in epistemological and axiological assumptions. The epistemological assumption is premised on how knowledge is acquired, while the axiological assumption looks into the values that influence acquiring that particular knowledge (Saunders et al., 2016). Since interpretivism develops from the opinion of an individual influenced by experiences and surroundings, it allows epistemological and axiological assumptions to thrive in the process of developing and testing the theory of project stakeholder engagement (Saunders et al., 2016).

The interchangeability between the two philosophies helped the researcher understand and appreciate the values behind the acquiring of knowledge. The interpretivism of the arguments around the context of project stakeholder engagement was strengthened by deciphering the underlying factors of knowledge and values (Saunders et al., 2016).

3.2.1 Philosophy-interpretivism

Interpretivism is a philosophy that studies meanings created by humans on interpreting the phenomena around them (Saunders et al., 2016). This philosophy is useful in extracting a deeper understanding of the participants' perceptions, paying attention to each participant's experiences, culture, beliefs and social influences (Saunders et al., 2016). Interpretivism is suited to researching the dynamism of stakeholder engagement since the perceptions of stakeholders in the engagement process differ according to their social circumstances, ideological beliefs and values (O'Riordan & Fairbrass, 2014). Carrim (2012) followed the similar interpretivist approach in fulfilling the Doctor of Philosophy degree requirements in Industrial Pyschology under the topic: "Who Am I?- South African Indian Women Managers' Struggle for Identity: Escaping the Ubiquitous Cage". O'Riordan & Fairbrass (2014) also opted for interpretivism and qualitative data research methods in their paper titled "Managing Corporate Social Responsibility (CSR) Stakeholder Engagement: A New Conceptual Framework".

3.2.1.1 Correlation between interpretivism and research objective 1 (To identify the consequence of a lack of stakeholder engagement)

Public infrastructure project stakeholders have their own individual experiences associated with the consequences of the lack of stakeholder engagement, meaning that this objective cannot be

generalised into a one size fits all consequence. Humans differ in their perceptions of events around them (Saunder et al., 2016) This is how, therefore, interpretivism provides a platform for participants to openly and exclusively describe their own experiences and observations on the consequences of lack of stakeholder engagement.

3.2.1.2 Correlation between interpretivism and research objective 2 (To identify the key stakeholders in the public infrastructure projects)

Key stakeholders in the public infrastructure projects are identified according to the project team's own interpretation of who the key stakeholders are based on the project's nature and locality (Rahman, 2017). Different project teams could identify different key stakeholders for the same project due to the interprivist nature of identification.

3.2.1.3 Correlation between interpretivism and research objective 3 (To determine how government engages with stakeholders)

The project team representing the government in the stakeholder engagement process does not have a preset level at which to engage with stakeholders. The extent of engaging with public infrastructure project stakeholders is driven by the need arising out of the visits to the identified project site at the planning phase of the project and evolving throughout all the project phases (Owolama & Booth, 2016).

3.2.1.4 Correlation between interpretivism and research objective 4 (To determine stakeholder expectations with regards to involvement)

The expectations of different stakeholders in a single project is wide-ranging and could not be quantified, hence leaving the discretionary nature of observing and continuously aligning with differing stakeholder expectations in the hands of the project team (Wilson & Rezgui, 2013). For the project team to effectively respond to various stakeholders' expectations in a project, interpretivism provides a suitable platform, since the project team uses their own interpretation based on their subjective opinion.

3.2.1.5 Correlation between interpretivism and research objective 5 (To determine how stakeholder engagement can be improved)

The effectiveness of improving stakeholder engagement lies in the suggesitions provided by stakeholders themselves, based on the experience stakeholders have (PMI, 2016). Interpretivism, therefore, interpretes phenomena based on the current status of stakeholder engagement presented by participants against the suggestions for improvement.

3.2.2 Approach-inductive

The inductive approach explores a phenomenon by collecting data first and then generating a theory out of the data collected using conceptualisation (Saunders et al., 2016). Aiming to develop a new theory around project stakeholder engagement prompts this research to seek knowledge by inductively collecting data from participants actively involved in the public infrastructure projects. Then, this empirical review was done through semi-structured interviews with sampled participants (Saunders et al., 2016).

3.2.3 Methodological choice - mono method qualitative

The mono method qualitative methodological choice uses a one data collection method (Saunders et al., 2016). This study used semi-structured interviews as the lone method of collecting data. Qualitative research focuses on experience, perspective and meaning from the participants' point of view (Hammarberg et al., 2016). Saunders et al. (2016) refers to qualitative research as the type of research associated with the philosophy of interpretivism, which derives realities from the interpretation of participants on experiences and issues constructed from their subjective and somehow biased cognitive space, often informed by their social interaction. Qualitative research methods are used to seek views on the condition, experience, or event from participants' personal perspectives (Hammarberg et al., 2016). The qualitative research method is more suitable for researching the subject of stakeholder engagement since stakeholders' behaviour in the engagement process is informed by their socially constructed propositions and the values and ethics governing them. This research intended to understand the feelings of participants around the subject of stakeholder engagement, so its focus was on the participants' behaviour and emotion when

responding to questions (Rahman, 2017). Therefore, the mono method qualitative approach was a suitable method to support this research.

3.2.4 Strategies - semi-structured interviews

Semi-structured interviews are interviews with an informal tone that promotes open-ended responses allowing for further probing and clarity-seeking questions (Saunders et al., 2016). Semi-structured interviews allow participants to add more input over and above the interviewer's questions and provide a platform where follow-up questions can be asked for clarity purposes. De Jonckheere & Vaughn (2019) opine that semi-structured interviews are flexible and allow for probing and follow-up questions. Questions for this research were thus open-ended, allowing participants opportunities to rephrase questions and provide advice, opinions, and additional information on the areas of stakeholder engagement they perceive to not have been properly covered by the interviewing session. This strategy allowed participants to share as much experience and challenges they had on public infrastructure project stakeholder engagement as possible.

3.2.5 Time horizon - cross-sectional

Time horizon is the type of observational study that measures the participants' exposure and outcome simultaneously (Setia, 2016). It includes participants based on the selection criteria that take into consideration the participants' level of exposure. Therefore, time horizon was suitable for this research.

3.3 Population and sampling

Saunders et al., (2016) define a **population** as a "full set of cases" from which the researcher pulls the sample. **Sampling** is taking a subset from the whole population (Taherdoost, 2016). **Non - Probability sampling** for interviews was done with participants drawn from the target population of public infrastructure project stakeholders of the Gauteng Department of Health. Non-Probability random sampling is the sampling method that selects representatives from a target population (Saunders et al., 2016). The research targeted the following groups:

- Facility Management Unit Managers (3.3.1)

- Hospital Chief Artisans (3.3.2)
- Resident Engineers (3.3.3)
- Project Managers (3.3.4)
- Chief Executive Officers (3.3.5)

The research used **stratified random sampling** to select participants from the above groups representing 32 hospitals in the Gauteng Department of Health. Stratified random sampling is the sampling method where the researcher systematically divides the targeted population into a series of strata of equal representation and randomly selects participants to form part of the research (Saunders et al., 2016). Numbers replaced the names of people and their professions to eliminate any possibility of bias (Saunders et al., 2016). The number of participants interviewed for this study was eight people representing 32 hospitals. The justification for this selection which constituted 25% of the research population, was that these participants were randomly selected from the strata of balanced representation from each hospital; therefore, the opinions provided by each participant would be representative of the entire population (Setia, 2016). Furthermore, interviewing more than a reasonable number of participants in qualitative research runs the risk of saturated and repetitive data that provides no newer information than that provided by preceding interviews (Saunders et al., 2016)

3.4 Development of the research instrument(s)

The instrument was a semi structured interview guide with questions developed by the researcher. The guide comprises of two sections i.e., Section A: general information comprising of the project details and participants' demography information; Section B were questions related to stakeholder engagements with the intention to note participants' understanding of stakeholder engagement, involvement, standard and regulation, Suggestions, checklist assessment, and observations.

The following empirical questions supported a semi-structured interview:

- **Who do you understand to be key stakeholders in the projects that you participate in?**

Background: This question is structured to compare empirical evidence with the stakeholder relationships in construction projects (PMI, 2016) identified in the literature review. The researcher

must establish the participants' level of stakeholder understanding in their area of project involvement.

- **How would you like to be involved in a project as a stakeholder?**

Background: This question is borne out of the power-interest grid by Chinyio & Akintoye (2008). It aims to weigh the participants' level of interest against their power in the project's decision-making process.

- **To what degree should stakeholder engagement be standardised and regulated?**

Background: Different authors [Owolana & Booth (2016), Wachi (2016), Chinyio & Akintoye, and OECD (2015)] argue that governments impose some form of a legal framework or regulation to enforce the principle of stakeholder engagement in the construction industry. This question deliberately tests the validity of this claim on the empirical point of view by observing whether participants in the construction industry share the same viewpoint.

- **What aspects of stakeholder engagement do you suggest apply exclusively to your locality?**

Background: Perspectives differ across different stakeholders and the categories under which they fall as far as demands and expectations are concerned (Gerard & Kowarsch, 2017). It is against this backdrop that the researcher wanted to get the participants' suggestions on the specific stakeholder needs applying to their locality.

- **If you were to contribute to the development of a stakeholder engagement checklist, what would be your contribution?**

Background: This question seeks to find empirical links with the stakeholder engagement monitoring tool developed by the International Finance Corporation (2007) for the construction stage of the project lifecycle and the one by the Organisation for Economic Co-operation and Development (OECD) (2015).

Due to the diversity of stakeholder expectations around the globe, one monitoring tool cannot serve the needs of the wide pool of project environments. Therefore, this question sought to establish the commonality of contributions from sampled participants drawn from a specific research pool.

- **What would be your assessment of the status of stakeholder engagement in the projects you are part of?**

Background: Each stakeholder to a project has an opinion and first-hand experience on the way they engage or are engaged (DeJonckheere & Vaughn, 2019). Therefore, this question sought to provide participants with a platform on which to share their current experience on stakeholder engagement.

- **What have you observed to be critical issues in relation to stakeholder engagement in your environment?**

Background: Each project is unique, and so is the environment at which it operates (Tahedoorst, 2016). Naturally, issues affecting each stakeholder differ, and those issues need to be observed by the researcher to extract similarities or differences amongst participants.

3.5 Data collection protocol

Data collection protocol is a detailed procedure outlining the plan of collecting and recording data in a research, dealing with the administrative issues of who does what and when (Saunders et al., 2016). Data collection protocol for a semi-structured interview comprises note-taking, observing themes and correlating them with the audio recordings to get a more comprehensive meaning of the participant's response (Saunders et al., 2016). Below is the data collection plan used for this study:

- Each participant received a phone call from the researcher asking for permission to meet for an interview (3.5.1)
- Participant information sheet was sent to all participants providing details of the study and the data collection procedure (3.5.2)
- The two parties set up the date, time, and location for the interview and then the participant signs a consent form (3.5.3)
- The researcher sent out email notifications of the interviews to participants with Microsoft Outlook reminders (3.5.4)

- Data was collected through semi-structured interviews and exactly the same questions were asked to all participants (3.5.5)
- An audio recorder was used to record interviews with the participants, which the researcher later transcribed and attached as annexures to the research report (3.5.6).

3.6 Ethical risks and mitigation strategy

The table 3.1 describes ethical risk and its mitigation strategy.

Table 3. 1: Ethical Risk and Mitigating Strategy

Ethical Risk	**Mitigation Strategy**
Generalisation of responses by participants	Stratified random sampling from a wide section of participants was applied and numbers used as codes to replace participants' names and professions and categories (Saunders et al., 2016).
Exposing participants' identities	The research used pseudonyms for both participants and the categories they represent to protect participants against unintended exposure (Saunders et al., 2016)
Impartiality, prejudice and bias	All participants were asked the same questions and transcripts are attached as annexures on the research report to prove this. Since semi-structured interviews provide for further questions of clarity to be asked by the interview, a slight difference in the line of questioning was a possibility (Setia, 2016).
Leaking of confidential information	The researcher signed a memorandum of understanding in a form of consent with the Participant committing to confidentiality. This memorandum of understanding allowed the

	participant to provide information on the subject matter without fear of victimisation (Saunders et al., 2016).
Adhering to ethics requirements	The study received technical and ethical approval from the University research committees attached as appendices.

3.7 Validity and reliability

3.7.1 Validity

Saunders et al., (2016) refer to validity as "the appropriateness of the measures used". This study utilised measurement validity and external validity to ensure that the data collected was valid. Measurement validity comprises construct validity, face validity, content validity, and predictive validity (Saunders et al., 2016). External validity strengthens the research findings' appropriateness by reusing and practicing them in settings or situations other than the present research setting and still provide an intended purpose (Steckler and McLeroy, 2008). The following were observed to ensure the validity of data collected:

- The data collected in the literature review was compared to that collected through the empirical questions
- Participants' responses were linked to their exposure to infrastructure projects.
- Clarification of questions to avoid misinterpretation.

3.7.2 Reliability

Reliability refers to how consistent the measure is over a period of time, with a strong consideration for the three types of consistency: over time (test-retest reliability), across items (internal consistency), and different researchers (inter-rater reliability) (Chiang et al., 2015). This study, therefore, ensured that the aforementioned three types of consistency were fulfilled by developing interview questions that can be asked by different researchers to different respondents from the same

population at different time intervals, and still produce results within the same response range. Saunders et al. (2016) measures the reliability of data on its replicability. The more the responses are relatively similar across all participants interviewed, the more that data can be trusted and reproducible. To ensure reliability of data in this research, the following was under scrutiny:

- The responses common across all participants interviewed through semi-structured interviews were considered replicable and therefore reliable and consistent.
- The procedures were meticulously documented for easy replication

3.8 Data analysis

Qualitative data analysis with thematic analysis was used in the following aspects. Qualitative data analysis refers to data extracted from social constructionism where participants interpret reality based on the situations and events around them (Saunders et al., 2016). Qualitative research derives its interpretation based on images and words, other than numbers which is associated with quantitative data analysis (Saunders et al., 2016). To reproduce recorded audio verbatim, transcriptions were done using both thematic analysis and NVIVO. The researcher coded qualitative data using themes and patterns for advanced and broader analysis (Saunders et al., 2016). NVIVO version 19 was used to analyse the qualitative data. NVIVO is a computer assisted qualitative data analysis software (CAQDAS) that uses actual terms to analyse data presented by participants (Saunders et al., 2016). Data analysis for this study was done using the following method. Only parts of the data related to the research were processed.

3.9 Summary

On this chapter, a detailed description of each of the research design, data collection tools, and data analysis method was presented. Interpretivism was chosen as the philosophical paradigm of this study. Interpretivism is a philosophy that studies meanings created by humans on interpreting the phenomena around them (Saunders et al., 2016). Theory would be developed with data collected from participants using inductive approach. Mono method qualitative research adopted for this studies uses semi-structured interviews as the one strategy for collecting data from participants. Data would therefore be analysed using thematic analysis and NVIVO. Furthermore, the study outlined

the steps taken to ensure validity, reliability and adherence to ethical requirements, risks and how they were mitigated. The next chapter presents the results of the study.

CHAPTER 4: DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter present results of the study achieved through data collected using methodologies presented in the proceeding chapter. Results are presented using tables comprising of categories and themes derived from the interview transcripts. Further to the categorisation of themes, research findings will be deduced from each of the thematised categories to interpret and analyse evolving relationships. The chapter will then establish a link between research findings and research objectives. Later into the chapter the study will deliberate on the research findings' response to the research contribution.

The main themes identified are:

- Identifying key stakeholders (4.2.1)
- The current involvement of stakeholders (4.2.2)
- Expectations of stakeholders with regards to involvement (4.2.3)
- Improving stakeholder engagement (4.2.4 – 4.2.6)
- Identified critical issues due to lack of engagement (4.2.7)

4.1.1 Demographic analysis of respondents

Table 3.2 below provides the demographic analysis of respondents. The table presents the demographic variables in terms of the respondents' categories and the percentage of their representivity.

Table 3.2: Demographic Analysis of Respondents

Demographic Variables	**Categories**	**Percentage(%)**
Gender	Male	**62.5**
	Female	**37.5**
Age Group	20-30	**12.5**
	30-40	**37.5**

	40 and above	**50**
Designation	Top Management • Chief Executive Officers • Resident Engineers	**37.5**
	Middle Management • Project Managers	**37.5**
	Junior Management • Chief Artisans • Facility Management Unit Managers	**25**
Qualification	Undergraduate	**50**
	Postgraduate	**50**
Stay in the public sector (in years)	Below 5	**25**
	5-10	**37.5**
	10 and above	**37.5**

4.2 Results and analysis

4.2.1 Key stakeholders' identification in the public infrastructure projects

In order to identify the key stakeholders in the public infrastructure, participants were asked who they understand as key stakeholders in their projects. The following elements emerged:

- End users (4.2.1.1)
- Customers (4.2.1.2)
- Communities (4.2.1.3)

- Hospital Management (4.2.1.4)
- Officer (4.2.1.5)
- Contractors (4.2.1.6)
- Sponsors (4.2.1.7)

When asked who they understand to be the key stakeholders in the project they participated in, most stakeholders were found to be End-users and Customers; Communities and Hospital Management. At the same time, other participants said the stakeholders were Officers, Communities, Contractors, and Sponsors. Other aspects included implementing Agent. Description of themes that emerged are discussed as follows:

4.2.1.1: End-users identified as stakeholders

The first element which emerged from the interview as a key stakeholder was End-users. According to Goodspeed et al. (2018), stakeholder participation should complement the role of project end users and provide unique perspectives on the issue and possible solutions by considering why engaging with specific stakeholders is crucial, what information is needed, and how feedback would be used. Goodspeed et al. (2018) further defined an end user as a person in a position to apply the information or tools being produced, evaluated or transferred through a project, which aligns. Rahjans (2018) indicates that the key stakeholders in a project are consulting individuals, groups and organisations affected by the project's outcome or can influence that outcome. End-users are referred to the key stakeholders of the project (NERRS, 2020). Participants, in confirming end-users as the key stakeholders, indicated:

"we also have end-users from infrastructure management side" P.1

"End-Users", P.6

"E*nd-users/customers*" P.7

4.2.1.2 : Customers

The second element that emerged from the interview as a key stakeholder was Customers. Fewer participants associated customers with end-users. Thus in this study customers were also identified as key stakeholder. NERRS (2020) opines that a stakeholder is anyone who is affected by or has an

interest or stake in a particular issue. Customers identified in this study as key stakeholders are also affected by the end results of projects participants are involved in.

Participant 1 opined:

> *"my understanding of key stakeholders in my projects would be end-users, of which those will be customers of the project in a way"* P.1

4.2.1.3: Communities

Another key stakeholder that emerged from the interviews are Communities. In the Namazzi et al. (2013) study, stakeholder analysis included district and community level stakeholders who were high level supporters of the proposed interventions.

Participant 5 noted:

> *"My key stakeholders are communities where the projects are implemented."* P.5

4.2.1.4: Officers

From the interviews, other key stakeholders that emerged were Officers such as Accounting Officer, Occupational Health and Safety Officer, and Quality Assurance Officers.

Participant 3 mentioned:

> *"Those would be the Accounting Officer, who is the CEO, the Unit Manager (In charge of the ward), the Facility Manager, Occupational Health and Safety Officer, Quality Assurance Officer"* P.3

4.2.1.5 : Hospital management

Hospital management also emerged as key stakeholders in the projects implemented at the hospital.

Participant 4 indicated:

> *"Our Stakeholders would be the Management of the hospital, the implementing Agent, the Project Manager from Head Office."* P.4

4.2.1.6: Contractors

Contractors were also identified as key stakeholders for projects in this study. A general contractor or project manager should be mapping the construction progress all the time and coordinating different activities (Zou, Zhang, and Wang, 2006). External stakeholders may include external customers, government, contractors, subcontractors and suppliers Xia et al. (2017).

Participant 7 noted:

> *"Hospital's EXCO, FMU, Maintenance committee, Project team, end-users/customers, Contractors"* P.7

4.2.1.7: Project Sponsors

Key stakeholders are also Project Sponsors. In the assessment of stakeholder-related risks in construction projects Xia et al. (2018) identified key stakeholders as project sponsors, owners, and governments at all levels. In this study, project sponsors are also identified as key stakeholders in line with Xia et al. (2017).

Participant 8 assumed:

> *"In my view the key stakeholders in a project will be the project Manager, end user client, project sponsor, those who oppose the project and project executing team"* P.8

Thus, the key stakeholders identified in this study, as emerged from the interviews, include end-users, customers, communities, officers, management, contractors, as well as project sponsors. Rahjans (2018) refers to stakeholder engagement as the process of consulting individuals, groups, and organisations affected by the project's outcome or can influence that outcome. Zanita (2019) presents that barriers of stakeholder engagement such as incomplete stakeholder identification, late identification of stakeholders and failure to identify key stakeholders can lead to project failure.

4.2.2 Expectations of stakeholder involvement

To understand the expectations of stakeholder involvement, participants were asked how they would like to be involved in a project as a stakeholder. Elements that emerged from the interviews related to stakeholders' level of involvement were:

- Receiving update / progress of the project (4.2.2.1)
- Facilitation of project implementation (4.2.2.2)
- Project specification (4.2.2.3)
- Oversight of the whole project (4.2.2.4)
- Provision of adequate information (4.2.2.5)
- Project phase involvement for the smooth running of the project (4.2.2.6)

The themes that emanated from this current study relate to the barriers to stakeholder engagement presented by Zarewa (2019). Barriers indicated by Zarewa (2019) include involvement of numerous stakeholders, failure to assess levels of influence by various stakeholders and failure to understand stakeholders' needs and expectations. The study by de Oliveira & Rabechini (2019) shows that stakeholder engagement increases trust in the project scope. Pollock et al. (2018) argues that it is good practice to involve stakeholders (patients, the public, health professionals and others) in systematic reviews, although there is limited evidence on how best this can be done. Involvement through receiving project progress updates is necessary to prevent risks of project cancellation, involvement in the implementation of the project prevents risks of inaccuracies, project specification improves the correctness of project requirements, project oversight keeps the project in check, adequate project information satisfies stakeholders, and involvement in all the project phases as a stakeholder would prevent project delays and unnecessary backlog, and that stakeholders should be involved from the onset (Pollock et al., 2018). Supporting this finding is the opinions of the participants from emerging themes presented below:

4.2.2.1 Involvement through receiving Progress pdate

When asked on what their involvement would be as stakeholders, one elements that emerged was that receiving progress update of the project is necessary to prevent risks of project cancellation.

Participant 1 proposed:

> *"we should all be updated in the process or the progress and implementation of the project by the Project Manager"* P.1

4.2.2.2 Facilitation of project implementation

Stakeholders being involved in the implementation of the project is an element that emerged from the interview.

Participant 1 further posited:

> *"…as a stakeholder I believe we should all be updated on the progress and implementation of the project by the Project Manager"*, P.1

4.2.2.3: Project specification

Stakeholders should be involved in the drafting of project specification from the onset (Pollock et al., 2018).

Participant 3 argued:

> *"I would like to be involved in a project whenever the specification is being drafted from the onset, not to be given a specification that that is completed and then I am told to monitor. We need to engaged at the first go as an end-user, so that we can outline our needs so that they can form part of the specification"* P.3

4.2.2.4 : Oversight of the project

Stakeholders should be involved in the oversight of the project. Zarewa (2019) and Pollock et al. (2018) opine that stakeholders should be involved in systematic reviews.

Participant 4 denoted:

> *"I would like to be involved on oversight, overseeing the issues of budget and quality."* P.4

4.2.2.5: Provision of adequate information

Stakeholders would like to be given adequate information on projects to ensure correctness and accountability. This can improve the smooth running of the project and prevent delays (Pollock et al., 2018).

Participant 5 insisted:

"I would like to be given adequate information for projects the government wants to embark on in my community and ensure that there is a buy in by the community, and we are made to understand that we have taken care of the assets even after completion" P.5

4.2.2.6: All project phases

A theme emerged from the interviews that stakeholders should be involved at all project phases.

Participant 7 indicated:

"As a stakeholder, I would like to be involved in all the project phases, from feasibility phase; to concept and detailed design phases; to execution phase; to commissioning and hand-over phases" P.7

Regarding stakeholders involved from the project onset, participant 8 opined:

"I would like to be involved from the project onset, as participation or inputs at this stage are very critical the end-user requirements need to be stated clear from the beginning", P.8

Stakeholder involvement should be reviewed systematically (Pollock et al., 2018) i.e. receiving progress update of the project; facilitation of project implementation; project specification; oversight of the whole project; provision of adequate information, project phase involvement for the smooth running of the project (beginning, planning, project phase, feasibility, execution and onset).

4.2.3 How to improve stakeholder engagement by means of standards and regulations

When participants were asked on how stakeholder engagement should be standardised and regulated, results show that the elements related to understanding the degree of standardization or involvement of stakeholder's engagement were:

- Stakeholder engagement should form part of the contract (4.2.3.1)
- Stakeholder engagement must have regulation at the end of each stage (4.2.3.2)
- Stakeholder engagement should be made part of departmental policy (4.2.3.3)
- Consultation guidelines must be developed to inform Stakeholder engagement (4.2.3.4)
- Consistent meetings and Communication (4.2.3.5)

- Commanding skills must be possessed by the incumbents (4.2.3.6)

There is lack of regulation governing stakeholder engagement in public infrastructure projects, leaving stakeholder engagement as an afterthought exercise left at the project manager's discretion, hence frustrating clients (Owolana & Booth, 2016). Such literature aligns with the results of this study, where results show the themes relating to understanding the degree of standardization or involvement of stakeholders engagement are that stakeholder engagement should form part of the contract; that stakeholder engagement should be done at the end of each stage; stakeholder engagement should be part of the departmental policy to ensure that it is consistently done; consultation guidelines should be done; meetings and communication; consistent application and persuasion in holding stakeholder engagements; and commanding skills to ensure that engagement is done, as indicated by one of the 8 participants. Several public documents are specifically designed to standardise stakeholder engagement in different entities across the globe, according to International Finance Corporation (2007), who produced their own comprehensive handbook outlining stakeholder engagement guidelines throughout the project cycle. One of the participants proposed the developing of own consultation guidelines in regulating and standardising stakeholder engagement. The themes that emerged are detailed below:

4.2.3.1 Form part of the contract

The element that emerged from the interviews was that stakeholder engagement in the project has to be standardized by forming part of the contract in the initial stage.

Participant 1 hypothesized:

> *"I would say to the degree that it should form part of the project program in terms of...or we should say it should form part of the contract of the project, that stakeholders need to be engaged, and it should be standardised how the interaction and the management of stakeholders is going to conducted"* P.1

4.2.3.2 : Regulation at the end of each stage

Stakeholder engagement in the project has to be regulated at the end of each stage.

Participant 2 remarked:

"I think at the beginning of the project, at the end of each stage and at the project handover stakeholder engagement should take place and be emphasized" P.2

4.2.3.3: Departmental policy

Stakeholder engagement should be part of the departmental policy, to clarify how stakeholder engagement should be conducted, especially at project implementation.

Participant 4 stated:

"Our departmental policy should have a section that explicitly outline how stakeholder engagement should be conducted in the implementation of infrastructure projects". P.4

4.2.3.4: Consultation guidelines

Consultation guidelines should be standardised.

Participant 5 implied:

"it is important to really consult as widely as possible but have guidelines that will assist progress" P.5

4.2.3.5: Meeting and communication

Meeting and communication emerged as a theme from the interviews. Stakeholder engagement in the project should have regulations that included regular meetings and communications.

Participant 6 opined:

"To the level of meetings and communication with stakeholders for influencing implementation" P.6

4.2.3.6: Commanding skills

Participants also indicated that the project manager must carry commanding skills as a standard and regulation of the infrastructure project to ensure success.

Participant 8 suggested:

"It is therefore important that the Project Manager must bear persuasion and commanding skills to deal with issues like this" P.8

4.2.4 How to improve stakeholder engagement in their locality

From the interviews, the elements related to aspects of stakeholder engagement participants suggested apply exclusively to their locality were:

- Public participation (4.2.4.1)
- Involvement (4.2.4.2)
- Planning (4.2.4.3)
- Consultation (4.2.4.4)
- Community engagement (4.2.4.5)
- Regulations (4.2.4.6)
- Assistance (4.2.4.7)
- Consideration for local community (4.2.4.8)
- Stability and community leader's encouragement (4.2.4.9)
- Partnership (4.2.4.10)
- Rollouts (4.2.4.11)
- Management (4.2.4.12)
- and Monitoring (4.2.4.13)

Wilson and Rezgui (2013), perceives part of the barriers to be the individual barriers. These individual barriers include absence of information about construction practices and principles, data overburdenness, skepticism on the provided project proposition and distrust of the project owner's information, assumed threat that comes with a change in lifestyle as a result of accepting the project, i.e., cost of utilising the infrastructure and fear to rely on new and unfamiliar technology, which tests the individual's literacy level. The principles of stakeholder engagement are developed to emphasize shared commitments to the values and objectives of stakeholder engagement with the project team, to discourage individualism, to encourage individual stakeholders and their organisations to add value to the process of stakeholder engagement, to take heed of potential tensions between productivity and inclusivity, and to generate a shared commitment to sustained and continuous

stakeholder engagement (Boaz et al., 2018). Boaz et al. (2018) further argues that the practices of stakeholder engagement should build flexibility to accommodate engagement and the outcomes of engagement; consider how input from stakeholders can be gathered systematically to meet objectives; consider how input from stakeholders can be collated, analysed and used; and to recognise that identification and involvement of stakeholders is an iterative and ongoing process, thereby encouraging stakeholder participation in the project.

The elements that emerged from this study are in line with this literature and the opinions of participants interviewed are indicated below:

4.2.4.1: Public participation

Public participation is the aspect of stakeholder engagement that applies exclusively to their locality.

Participant 5 proposed:

> *"Public participation meetings involving community leaders should be encouraged to ensure stability and avoiding stoppages of projects"* P.5

Participant 6 noted:

> "*Consultation, participation, partnership, on-site rollouts and planning*", P.6

Participant 8 deduced:

> "*Consultation and participation*", P.8

4.2.4.2: Involvement

Local councillors must be involved to assist in the equal sharing of employment opportunities by local people. Involvement is therefore a theme that emerged from this analysis.

Notably, participant 4 said:

> *"The local councillor must be involved to assist in the issues of employment opportunities for local people, there must be consideration for local contractors"*, P.4

4.2.4.3: Planning

Planning is one of the key aspects that needed in their locality.

Participant 6 mentioned:

> *"…consultation, participation, partnership, on-site rollouts and planning"* P.6

One of the participants opined that stakeholder engagement should actually start at an initial stage of the project.

Participant 1 enthused:

> *"I believe, in my field, our engagement as a stakeholder should actually start at an initial stage of the project, in terms of planning what needs to be done in a project, so that would be vital for us to be involved in the planning phase, during the construction stage as well, because our role is to ensure that we have the necessary equipment that will be installed in that project or building"* P.1

4.2.4.4: Consultation

Consultation was raised as one of the necessary aspects of stakeholder engagement in the stakeholders' area of locality.

Participant 8 emphasized:

> *"consultation and participation"* P.8

4.2.4.5: Community engagement

Community engagement is also part of the needed aspect in their locality.

Participant 2 advised:

> *"Community engagement. It would be increasing the Count of community engagement, more especially with their leaders"* P.2

1.4.3.3 4.2.4.6: Regulations

The OHS regulations are needed in their locality.

Participant 3 enlisted:

> *"These would be OHS regulations, Infection Control, Quality Assurance"* P.3

4.2.4.7 : Assistance

Assistance on issues such as employment opportunities and consider local contractors is needed in their locality.

Participant 4 noted:

> *"The local councillor must be involved to assist in the issues of employment opportunities for local people, there must be consideration for local contractors"* P.4

4.2.4.8: Consideration for local community

Consideration for local contractors is needed in their locality.

Participant 4 suggested:

> *"The local councillor must be involved to assist in the issues of employment opportunities for local people, there must be a consideration for local contractors,"* P.4

4.2.4.9: Stability and encourage involvement of community leaders

There is a need for stability through encouraging public participation meetings involving community leaders within the participant's locality.

Participant 5 enthused:

> *"Public participation meetings involving community leaders should be encouraged to ensure stability and avoiding stoppages of projects"*, P.5

4.2.4.10: Partnership

Partnership aspect was indicated as a need in their locality.

Participant 6 proposed:

> *"...consultation, participation, partnership, on-site rollouts and planning"*, P.6

4.2.4.11: On-site rollouts

Participants suggested on-site rollouts are needed in their locality.

Participant 6 further noted:

> *"...consultation, participation, partnership, on-site rollouts and planning"*, P.6

4.2.4.12: Management

Management of stakeholder engagement emerged from the interviews.

Participant 7 indicated:

> *"Managing stakeholder engagements and monitoring stakeholder engagements"*, P.7

4.2.4.13: Monitoring

The element that emerged from the interview suggested monitoring stakeholder engagement as a need in their locality. According to the principles in planning stakeholder engagement activity is useful in monitoring and evaluating stakeholder engagement (Boaz et al., 2018)

Participant 7 advised:

> *"Managing stakeholder engagements and monitoring stakeholder engagements"* P.7

4.2.5 Checklist: how to improve stakeholder engagement

If you were to contribute to the development of a stakeholder engagement checklist, what would be your contribution? Results indicated that the elements related to participants' contributions towards the development of a stakeholder engagement checklist were:

- Verification of engagement (4.2.5.1)
- Compliance (4.2.5.2
- Checklist sign-off (4.2.5.3)

- Timelines (4.2.5.4)
- Attendance register (4.2.5.6)
- Address challenges (4.2.5.7)
- Consultation (4.2.5.8)
- Organise local suppliers (4.2.5.9)
- Development plan (4.2.5.10)
- Listing of all stakeholders (4.2.5.11)
- Identify assessments and planning; and (4.2.5.12)
- Build a coalition (4.2.5.13).

The emerging themes are in line with the literature by de Oliveira & Rabechini, (2019), which indicates that Stakeholder Management involves a process in which the project team manages the needs of stakeholders, identifying them, collecting their expectations, closing agreements with them, and ensuring that their objectives are met, as described below:

4.2.5.1: Verifying engagements

Stakeholders must be properly engaged and verify that the engagements were done.

Participant 1 suggested:

> *"There should be a way of verifying that these stakeholders have been engaged in certain stages"*, P.1

4.2.5.2: Compliance and proper planning

Ensuring that there is proper planning of the project would be part of the contribution indicated.

Participant 3 emphasized:

> *"It would be to ensure that there is compliance at all times, proper planning of the project, timeframes for the start and finish dates are clearly set"*

4.2.5.3: Checklist sign-off

Contribution would be to ensure that all stakeholders have signed off the checklist before the project moves from a certain stage.

Participant 1 enthused:

> *"I believe, if there could be a clause in that checklist, if they could say the project does not move from a certain stage up until certain stakeholders have signed off, or certain stakeholders have been consulted"*, P.1

4.2.5.4: Timelines

Timelines should be in place, and participants indicated that seeing that there are timelines available confirms the contribution of attendees when the engagements take place.

Participant 2 pleaded:

> *"I would want to see the timelines when the engagement takes place, that is, every time there is an engagement a format that looks like an attendance register must be developed to confirm that engagement"* P.2

4.2.5.5: Attendance register

Making sure that there is an attendance register developed to confirm engagement with stakeholders.

Participant 2 reiterated:

> *"I would want to see the timelines when the engagement takes place, that is, every time there is an engagement a format that looks like an attendance register must be developed to confirm that engagement"*. P.2

4.2.5.6: Addressing challenges

Observing how challenges are being addressed throughout the project emerged as an element.

Participant 2 posited:

> *"I would also like to see how the raised challenges are being addressed"* P.2

4.2.5.7: Consultation

Consulting with all the stakeholders has emerged as an element.

Participant 4 pointed out:

> *"Consultation with all the stakeholders in the drafting of the project specification"* P.4

4.2.5.8: Organising local suppliers

Organising local suppliers was also highlighted as contribution participants would do.

Participant 5 advised:

> *"I would advise that the local suppliers be organized…"* P.5

4.2.5.9: Intergrated plan

Providing an integrated plan for ensuring that local suppliers participate in their community's economic development would one the contribution highlighted by the participant.

Participant 5 noted:

> *"…have Integrated Development Plan for ensuring that they participate in the economic development of their community"* P.5

4.2.5.10: Listing all stakeholders per project

Contribution would be to list stakeholders per project phase.

Participant 6 elaborated:

> *"That would be, uhm, stakeholder list per project phase, contact names, and engagement approach"* P.6

4.2.5.11: Identifying, assessment and planning of stakeholders communication

Contribution indicated by participants would be identifying stakeholders.

Participant 7 opined:

"Identifying stakeholders, Stakeholder assessment, Planning stakeholder communication, Engaging stakeholders" P.7

4.2.5.12 Building coalition

Theme contribution that emerged from the interviews were to build coalition among stakeholders.

Participant 8 proposed:

"The other important element will be to build / form coalition among the stakeholders; this is to gain power which will provide authority to project Manager to move the project forward" P.8

4.2.6 Critical issues observed

This theme responds to the question: "what have you observed to be critical issues in relation to stakeholder engagement in your environment?" In line with the organisational barriers presented by Wilson and Rezgui, (2013) who alluded to the absence of enabling support systems as a result of fragmented information sources, training not being provided to relevant stakeholders on up-skilling on the use of provided infrastructure, tight work schedules and overload that prompt organisations to speed up tasks without due consideration to stakeholder engagement and adequate time to reflect on lessons learnt. This current study shows that the elements related to stakeholder engagement's critical issues were:

- Lack of proper engagement (4.2.6.1)
- Time (4.2.6.2)
- Safety (4.2.6.3)
- Consultation (4.2.6.4)
- Empowerment (4.2.6.5)
- Centralisation (4.2.6.6)
- Communication (4.2.6.7)
- Control (4.2.6.8)

4.2.6.1: Lack of proper engagement

Lack of proper engagement emerged as an element related to critical issues observed by the participants.

Participant 1 lamented:

> *"during the planning of the project they do not engage all the stakeholders that are supposed to be engaged in the planning stage, which gives rise to problems at the construction stage where designs need to be changed, walls broken to cater for equipment that was not thought of earlier"* P.1

4.2.6.2: Timeframes not kept

Timeframes not kept has been one of the critical issues observed which emerged as an element.

Participant 3 confirmed:

> *"Projects do not abide to timeframes"* P.3

4.2.6.3: Safety

Participants indicated issues of safety as being overlooked.

Participant 3 denounced:

> *"Project Managers really do not take issues of safety very seriously"* P.3

4.2.6.4: Lack of proper consultation

Another critical issue is proper consultation.

Participant advised:

> *"Proper consultation with all stakeholders involved when major decisions are taken from time to time, and how they would have impact on the project"* P.4

4.2.6.5: Community empowerment

Communities empowerment was also raised as one of the critical issues.

Participant 5 suggested:

> *"The communities need to be empowered so that they understand where they can be engaged and when they should allow specialised services to be conducted by professional companies"* P.5

4.2.6.6: Centralisation

The centralisation of stakeholder information also emerged as an element regarding critical issues within participant environment.

Participant 6 proposed:

> *"I suppose if we can have a centralised stakeholder information, and both consultative and cooperative approaches"* P.6

4.2.6.7: Lack of communication

Lack of communication among the end-users was raised as critical issue in their environment.

Participant 7 claims:

> *"The critical issues in my environment are the changing end-user requirements during project execution and the lack of communication among the end-users"* P.7

4.2.6.8: Control

Project Manager must be in control also emerged as a critical issue.

Participant 8 opined:

> *"The Project Manager must be in control by balancing stakeholders' needs, project progress time frames are very essential and project budget is of utmost Importance"* P.8

4.2.7 Status of stakeholder engagement

This is in line with the question, "what would be your assessment of the status of stakeholder engagement in the projects you are part of?" Analysis from this study regarding the status of stakeholder management is in line with Mok et al., (2017) who indicated that identifying accurate

end users' requirements, functionality and resources, and aesthetics as the three major pitfalls that contribute to addressing project stakeholders' complexity. Majority of participants could relate to the project stakeholder engagement status as having Minimal engagements, Gap; Improper conduction, Lack of awareness, Misalignment, Incompliance, Consultation, Participation, Difficult public consultation, Limited resources, Inadequate representation, Lack of willingness and Quality improvement. Thus, this shows that Teo and Loosemore's (2017) study conceded that while communities are widely recognised as project stakeholders, there is a lack of empirical research to help project managers deal effectively with communities avoid protests. Teo and Loosemore (2017) further argued that construction project managers are poorly equipped in handling communities as stakeholders and tend to view communities as a project risk which speaks to lack of awareness highlighted by Participant 2 in this current study.

Results show that the elements that emerged from participants assessing stakeholder engagement in the projects that they are part of are as follows:

- minimal engagement (4.2.7.1)
- gap (4.2.7.2)
- improper conduction of stakeholder engagement (4.2.7.3)
- lack of awareness (4.2.7.4)
- misalignment (4.2.7.5)
- lack of compliance (4.2.7.6)
- no consultation (4.2.7.7)
- low participation (4.2.7.8)
- difficult public consultation (4.2.7.9)
- having limited resources (4.2.7.10)
- inadequate representation (4.2.7.11)
- lack of willingness (4.2.7.12)
- need for quality improvement (4.2.7.13)

These elements are described below:

4.2.7.1: Minimal engagement

Participants said there is insufficient or minimal stakeholder engagement.

Participant 2 remarked:

"I don't think enough has been done in terms of engaging stakeholders" P.2

4.2.7.2: Gap

Participants said there is a very big gap in the way stakeholder engagement is done.

Participant 1 mentioned:

"I think there is a very big gap in the way stakeholder engagement is done" P.1

4.2.7.3: Improper conduction of stakeholder engagement

Improper conduction of stakeholder engagement emerged as an element representing the status of stakeholder engagement.

Participant 1 confessed:

"In a way, I can say stakeholder engagement in my unit is not properly conducted, sometimes it's not even done" P.1

4.2.7.4: Lack of awareness

Contractors not fully aware of what is expected of them was raised by participants as the status of stakeholder tenement.

Participant 2 indicated:

"in some instances you find that the contractor is not fully aware of what is expected of them" P.4

4.2.7.5: Misalignment

Participants said there is misalignment between what contractors came to deliver and what is expected of them.

Participant 2 remarked:

"in some instances you find that the contractor is not fully aware of what is expected of them, or there is a misalignment between what they came to deliver and what is expected of them" P.2

4.2.7.6: Lack of compliance

Participants indicated that project teams do not comply with some of the construction industry regulations.

Participant 3 denoted:

"The project team does not comply with some of the construction industry regulations due to the impression that end-users are not technically-minded, therefore they won't be able to identify that there was manipulation" P.3

4.2.7.7: Lack of consultation

It emerged as an element that end-users are not being consulted.

Participant 4 mentioned:

"End-users are not consulted, leading to variation orders, thus escalating the cost of the project" P.4

4.2.7.8: Low stakeholder participation

Participants noted that participation of stakeholders is low.

Participant 5 indicated:

"Currently the participation of stakeholders is low to zero. Moreover…" P.5

4.2.7. 9: Difficult public consultation

Participants mentioned that consultation with the public is difficult.

Participant 5 posited:

"the lockdown made consultation with the public even more difficult" P.5

4.2.7.10: Resources

Participants indicated limited resources is preventing stakeholder engagements progress.

Participant 6 remarked:

"There is limited resources" P.6

4.2.7.11: Inadequate representation

Participants said that there is inadequate representation to hold a meaningful stakeholder endearment.

Participant 6 denoted:

"no adequate representation" P.6

4.2.7.12: Lack of willingness

Lack of willingness to participate from other stakeholders.

Participant 6 lamented:

"there is unwillingness to participate from other stakeholders" P.6

4.2.7.13: Need for quality improvement

Organisation needs to improve quality service to its customers.

Participant 8 advised:

"organization needs to improve quality service to its customers, all those that are part of the process need to be roped in for process review so that the by -in is secured and the ownership is critical component at the operational level, so if they are not part of the project the stakeholders will not give their best" P.8

4.3 NVIVO Data Analysis

4.3.1 Initial Codes

The table below presents the initial codes extracted from each of the semi-structured interviews conducted with the eight participants. The numbers under the columns "files" and "references" represent the number of files and references each code appears on the NVIVO software. Themes of the study will, therefore, be developed from these codes as presented on the table below:

Table 4.1: Initial Codes

Name of the Code	Files	References
Stakeholder Engagement Improvement	1	1
The status of the stakeholder engagement in the projects I'm part of is good.	1	1
there is unwillingness to participate from other stakeholders	1	1
Currently the participation of stakeholders is low to zero.	1	1
End-users are not consulted, leading to variation orders, thus escalating the cost of the project.	1	1
project team does not comply with some of the construction industry regulations	1	1
I don't think enough has been done in terms of engaging stakeholders	1	1
sometimes it's not even done	1	1
stakeholder engagement in my unit is not properly conducted	1	1
very big gap	1	1
Managing stakeholder engagements and monitoring stakeholder engagements	1	1
partnership	1	1
participation	1	1
consultation	1	1
local suppliers be organised	1	1
Public participation meetings involving community leaders	1	1
consideration for local contractors	1	1
local councillor must be involved to assist in the issues of employment opportunities for local people	1	1
proper training	1	1

Quality Assurance	1	1
Infection Control	1	1
OHS regulations	1	1
finding a better understanding with clinical end-users, explaining what is expected of them in a project	1	1
increasing the frequency of community engagement, more especially with their leaders	1	1
engagement as a stakeholder should actually start at an initial stage of the project, in terms of planning what needs to be done in a project, so that would be vital for us to be involved in the planning phase, during the construction stage as well	1	1
I would like to be involved from the project onset	1	1
As a stakeholder, I would like to be involved in all the project phases	1	1
By participating from the beginning of the project, planning phase, until completion and handover	1	1
I would like to be given adequate information for projects the government wants to embark on in my community and ensure that there is a buy in by the community	1	1
I would like to be involved on oversight, overseeing the issues of budget and quality	1	1
whenever the specification is being drafted from the onset	1	1
I would like to be involved at the initial stages of the project	1	1
we should all be updated in the process or the progress and implementation of the project by the Project Manager	1	1
The Project Manager must be in control by balancing stakeholders needs	1	1
lack of communication among the end-users	1	1
changing end-user requirements during project execution	1	1
I suppose if we can have a centralised stakeholder information	1	1
communities need to be empowered	1	1
Project Managers really do not take issues of safety very seriously.	1	1
issues of safety are being overlooked by contractors	1	1
Projects do not abide to timeframes	1	1
a lot of frustrations for us as end-users	1	1
The project team does not comply with some of the construction industry regulations	1	1

Stakeholder engagement is very minimal	1	1
the contractor is not fully aware of what is expected of them	1	1
lack of education in how the community can be involved in a project	1	1
most stoppages are as a result of community unrest	1	1
during the planning of the project they do not engage all the stakeholders that are supposed to be engaged in the planning stage, which gives rise to problems at the construction stage where designs need to be changed	1	1
could say the project does not move from a certain stage up until certain stakeholders have signed off, or certain stakeholders have been consulted	1	1
how the raised challenges are being addressed	1	1
compliance	1	1
timeframes for the start and finish dates are clearly set	1	1
Consultation with all the stakeholders in the drafting of the project specification	1	1
to establish stakeholders needs ~ expectations analysis so that the they can be well managed and influenced to ensure project success	1	1
engagement approach	1	1
Identifying stakeholders~~ -~Stakeholder assessment~~ -~Planning stakeholder communication~~ -~Engaging stakeholders	1	1
stakeholder list per project phase	1	1
timelines when the engagement takes place	1	1
Standardization and regulating stakeholder engagements might not be feasible as projects are unique by nature	1	1
Stakeholder engagement should be standardized, regulated and applied in all projects	1	1
meetings and communication with stakeholders	1	1
guidelines	1	1
departmental policy should have a section that explicitly outline how stakeholder engagement should be conducted in the implementation of infrastructure projects	1	1
The regulation should state that prior to starting the project, the end-user and all other stakeholders must be thoroughly consulted, and nothing should proceed without this consultation being done	1	1

timelines	1	1
That is a tricky one because stakeholder engagement is not the same across the board	1	1
gazetted to be part of our project management systems	1	1
it should be standardised how the interaction and the management of stakeholders are going to be conducted	1	1
should form part of the contract of the project	1	1
Key Stakeholders	0	0
Attendance Register	8	11
those who oppose the project	1	1
project sponsor	1	1
client	1	1
Project Manager	3	3
Contractors	1	1
end-users	5	6
Project team	2	2
communities	2	2
implementing Agent	1	1
Management of the hospital	2	3
Quality Assurance Officer	1	1
Occupational Health and Safety Officer	1	1
Professional Service Providers	2	2
community leaders	1	1
Engineers	1	1
hospital managers	2	3
nurses	2	2
doctors	1	1

4.3.2 Themes

The themes presented below are generated using NVIVO software to show data that counts the number of times references are coded under each participant's transcript. Each theme generates its own coded references.

4.3.2.1 *Theme 1: Critical Issues Observed*

Interview Transcript for Participant 1- 1 reference coded [2,61% Coverage]

Reference 1 - 2,61% Coverage

During the planning of the project they do not engage all the stakeholders that are supposed to be engaged in the planning stage, which gives rise to problems at the construction stage where designs need to be changed

Interview Transcript for Participant 2- 3 references coded [7,77% Coverage]

Reference 1 - 1,89% Coverage

In the projects that I am involved in, most stoppages are as a result of community unrest

Reference 2 - 2,57% Coverage

Lack of education in how the community can be involved in a project, you know, their understanding and their expectations

Reference 3 - 3,30% Coverage

The contractor is not fully aware of what is expected of them, or there is a misalignment between what they came to deliver and what is expected of them.

Interview Transcript for Participant 3- 5 references coded [12,85% Coverage]

Reference 1 - 0,91% Coverage

Stakeholder engagement is very minimal

Reference 2 - 5,22% Coverage

The project team does not comply with some of the construction industry regulations due to the impression that end-users are not technically-minded, therefore they won't be able to identify that there was manipulation.

Reference 3 - 2,92% Coverage

A lot of frustrations for us as end-users because when we raise these issues they are regarded as costly and time-wasting.

Reference 4 - 0,84% Coverage

Projects do not abide to timeframes

Reference 5 - 2,97% Coverage

Issues of safety are being overlooked by contractors. Project Managers really do not take issues of safety very seriously.

Interview Transcript for Participant 4- 1 reference coded [4,82% Coverage]

Reference 1 - 4,82% Coverage

Proper consultation with all stakeholders involved when major decisions are taken from time to time, and how they would have impact on the project.

Interview Transcript for Participant 5- 1 reference coded [5,53% Coverage]

Reference 1 - 5,53% Coverage

The communities need to be empowered so that they understand where they can be engaged and when they should allow specialised services to be conducted by professional companies.

Interview Transcript for Participant 6- 1 reference coded [4,33% Coverage]

Reference 1 - 4,33% Coverage

I suppose if we can have a centralised stakeholder information, and both consultative and cooperative approaches.

Interview Transcript for Participant 7- 2 references coded [4,48% Coverage]

Reference 1 - 3,17% Coverage

The critical issues in my environment are the changing end-user requirements during project execution

Reference 2 - 1,32% Coverage

Lack of communication among the end-users.

Interview Transcript for Participant 8- 1 reference coded [3,82% Coverage]

Reference 1 - 3,82% Coverage

The Project Manager must be in control by balancing stakeholders needs, project progress time frames are very essential and project budget is of utmost Importance.

4.3.2.2 *Theme 2-Expectations of Stakeholder Involvement*

Interview Transcript for Participant 1- 1 reference coded [5,16% Coverage]

Reference 1 - 5,16% Coverage

As a stakeholder in a project, I believe my involvement should be... we should all be updated in the process or the progress and implementation of the project by the Project Manager. So, this is to ensure that we do not miss any eh... eh... information or important task that needs to be done by different stakeholders. So as a stakeholder I believe we should all be updated on the progress and information of the project, yes...

Interview Transcript for Participant 2- 1 reference coded [7,15% Coverage]

Reference 1 - 7,15% Coverage

I would like to be involved at the initial stages of the project, [pause]because the decisions that are taken there help you to better understand why the project would move the certain way. So, it could be right at the beginning, because some requirements of the project are better addressed at the beginning than later in the project.

Interview Transcript for Participant 3- 1 reference coded [6,65% Coverage]

Reference 1 - 6,65% Coverage

Whenever the specification is being drafted from the onset, not to be given a specification that that is completed and then I am told to monitor. We need to engaged at the first go as an end-user, so that we can outline our needs so that they can form part of the specification.

Interview Transcript for Participant 4- 1 reference coded [2,78% Coverage]

Reference 1 - 2,78% Coverage

I would like to be involved on oversight, overseeing the issues of budget and quality

Interview Transcript for Participant 5- 1 reference coded [7,94% Coverage]

Reference 1 - 7,94% Coverage

I would like to be given adequate information for projects the government wants to embark on in my community and ensure that there is a buy in by the community, and we are made to understand that we have taken care of the assets even after completion.

Interview Transcript for Participant 6- 1 reference coded [3,69% Coverage]

Reference 1 - 3,69% Coverage

By participating from the beginning of the project, planning phase, until completion and handover

Interview Transcript for Participant 7- 1 reference coded [6,08% Coverage]

Reference 1 - 6,08% Coverage

As a stakeholder, I would like to be involved in all the project phases, from feasibility phase; to concept and detailed design phases; to execution phase; to commissioning and hand-over phases.

Interview Transcript for Participant 8- 1 reference coded [4,17% Coverage]

Reference 1 - 4,17% Coverage

I would like to be involved from the project onset, as participation or inputs at this stage are very critical the end user requirements need to be stated clear from the beginning

4.3.2.3 *Theme 3-Key Stakeholders*

Interview Transcript for Participant 1- 7 references coded [0,91% Coverage]

Reference 1 - 0,11% Coverage

End-users

Reference 2 - 0,08% Coverage

Doctors

Reference 3 - 0,07% Coverage

Nurses

Reference 4 - 0,20% Coverage

Hospital managers

Reference 5 - 0,11% Coverage

Engineers

Reference 6 - 0,13% Coverage

Consultants

Reference 7 - 0,20% Coverage

Community leaders

Interview Transcript for Participant 2- 4 references coded [1,38% Coverage]

Reference 1 - 0,19% Coverage

End-users

Reference 2 - 0,32% Coverage

Project Manager

Reference 3 - 0,64% Coverage

Professional Service Providers

Reference 4 - 0,23% Coverage

Communities

Interview Transcript for Participant 3- 5 references coded [2,87% Coverage]

Reference 1 - 0,43% Coverage

Accounting Officer

Reference 2 - 0,07% Coverage

CEO

Reference 3 - 0,86% Coverage

Unit Manager (In charge of the ward)

Reference 4 - 0,91% Coverage

Occupational Health and Safety Officer

Reference 5 - 0,60% Coverage

Quality Assurance Officer

Interview Transcript for Participant 4- 3 references coded [2,46% Coverage]

Reference 1 - 0,84% Coverage

Management of the hospital

Reference 2 - 0,58% Coverage

Implementing Agent

Reference 3 - 1,04% Coverage

Project Manager from Head Office

Interview Transcript for Participant 5- 1 reference coded [0,34% Coverage]

Reference 1 - 0,34% Coverage

Communities

Interview Transcript for Participant 6- 1 reference coded [0,34% Coverage]

Reference 1 - 0,34% Coverage

End-Users

Interview Transcript for Participant 7- 6 references coded [2,41% Coverage]

Reference 1 - 0,47% Coverage

Hospital's EXCO

Reference 2 - 0,66% Coverage

Maintenance committee

Reference 3 - 0,38% Coverage

Project team

Reference 4 - 0,28% Coverage

end-users

Reference 5 - 0,28% Coverage

customers

Reference 6 - 0,34% Coverage

Contractors

Interview Transcript for Participant 8- 1 reference coded [0,68% Coverage]

Reference 1 - 0,68% Coverage

those who oppose the project

4.3.2.4 *Theme 4-How to Improve Stakeholder Engagement*

Interview Transcript for Participant 1- 1 reference coded [8,26% Coverage]

Reference 1 - 8,26% Coverage

I will believe, in my field, our engagement as a stakeholder should actually start at an initial stage of the project, in terms of planning what needs to be done in a project, so that would be vital for us to be involved in the planning phase, during the construction stage as well, because our role is to ensure that we have the necessary equipment that will be installed in that project or building. So, when we are involved from planning, we will know what type of equipment we need to buy, eh, and what the quantities are. And during construction, eh, it will help me to know when do I need to install that equipment. Therefore, it will be from planning all the way to construction.

Interview Transcript for Participant 2- 2 references coded [5,09% Coverage]

Reference 1 - 2,51% Coverage

Community engagement. It would be increasing the frequency of community engagement, more especially with their leaders

Reference 2 - 2,57% Coverage

It would also be finding a better understanding with clinical end-users, explaining what is expected of them in a project

Interview Transcript for Participant 3- 4 references coded [3,61% Coverage]

Reference 1 - 0,36% Coverage

OHS regulations

Reference 2 - 0,43% Coverage

Infection Control

Reference 3 - 0,41% Coverage

Quality Assurance

Reference 4 - 2,42% Coverage

Proper training that will allow us to actively participate on the technical issues of infrastructure.

Interview Transcript for Participant 4- 2 references coded [5,05% Coverage]

Reference 1 - 3,43% Coverage

The local councillor must be involved to assist in the issues of employment opportunities for local people

Reference 2 - 1,62% Coverage

There must be consideration for local contractors.

Interview Transcript for Participant 5- 2 references coded [10,85% Coverage]

Reference 1 - 4,19% Coverage

Public participation meetings involving community leaders should be encouraged to ensure stability and avoiding stoppages of projects.

Reference 2 - 6,66% Coverage

Local suppliers be organised and ensure to be part of the solution in all the listed projects and have Integrated Development Plan for ensuring that they participate in the economic development of their community.

Interview Transcript for Participant 6- 4 references coded [2,42% Coverage]

Reference 1 - 0,45% Coverage

Consultation

Reference 2 - 0,48% Coverage

Participation

Reference 3 - 0,41% Coverage

Partnership

Reference 4 - 1,08% Coverage

On-site rollouts and planning

Interview Transcript for Participant 7- 1 reference coded [2,26% Coverage]

Reference 1 - 2,26% Coverage

Managing stakeholder engagements and monitoring stakeholder engagements.

Interview Transcript for Participant 8- 2 references coded [0,61% Coverage]

Reference 1 - 0,28% Coverage

Consultation

Reference 2 - 0,33% Coverage

Participation.

4.3.2.5 *Theme 5-Stakeholder Engagement Checklist*

Interview Transcript for Participant 1- 1 reference coded [9,55% Coverage]

Reference 1 - 9,55% Coverage

If there could be in that checklist, if they could say the project does not move from a certain stage up until certain stakeholders have signed off, or certain stakeholders have been consulted. There should

be a way of verifying that these stakeholders have been engaged in certain stages. For example, at a planning stage, before they go over to procurement, they need to make sure that they tick on that planning stage before they pass the gate to the next stage that these stakeholders have been engaged, and it can be verified that they have been engaged. So, there should be that sort of a system, a gateway system that stakeholders have been engaged and you can move to the next one. But, if you have not engaged them you cannot move to the next stage. So, that's what I think could work.

Interview Transcript for Participant 2- 3 references coded [3,72% Coverage]

Reference 1 - 1,38% Coverage

I would want to see the timelines when the engagement takes place

Reference 2 - 1,36% Coverage

Attendance register must be developed to confirm that engagement

Reference 3 - 0,98% Coverage

How the raised challenges are being addressed

Interview Transcript for Participant 3- 3 references coded [2,63% Coverage]

Reference 1 - 0,55% Coverage

Compliance at all times

Reference 2 - 0,72% Coverage

Proper planning of the project

Reference 3 - 1,36% Coverage

Timeframes for the start and finish dates are clearly set

Interview Transcript for Participant 4- 1 reference coded [2,75% Coverage]

Reference 1 - 2,75% Coverage

Consultation with all the stakeholders in the drafting of the project specification.

Interview Transcript for Participant 6- 2 references coded [1,98% Coverage]

Reference 1 - 1,27% Coverage

Stakeholder list per project phase

Reference 2 - 0,71% Coverage

Engagement approach

Interview Transcript for Participant 7- 1 reference coded [4,73% Coverage]

Reference 1 - 4,73% Coverage

Identifying stakeholders

- Stakeholder assessment
- Planning stakeholder communication
- Engaging stakeholders

Interview Transcript for Participant 8- 1 reference coded [3,12% Coverage]

Reference 1 - 3,12% Coverage

To establish stakeholders needs / expectations analysis so that the they can be well managed and influenced to ensure project success.

4.3.2.6 *Theme 6-Standards and Regulations*

Interview Transcript for Participant 1- 2 references coded [5,96% Coverage]

Reference 1 - 3,69% Coverage

I would say to the degree that it should form part of the project programme in terms of...or we should say it should form part of the contract of the project, that stakeholders need to be engaged, and it should be standardised how the interaction and the management of stakeholders are going to be conducted

Reference 2 - 2,26% Coverage

Gazetted to be part of our project management systems, because all the projects we are running here, they can speak about stakeholder engagement, but it is not part of the project document

Interview Transcript for Participant 2- 3 references coded [2,23% Coverage]

Reference 1 - 1,79% Coverage

That is a tricky one because stakeholder engagement is not the same across the board

Reference 2 - 0,21% Coverage

Timelines

Reference 3 - 0,23% Coverage

Attendance

Interview Transcript for Participant 3- 1 reference coded [4,74% Coverage]

Reference 1 - 4,74% Coverage

The regulation should state that prior to starting the project, the end-user and all other stakeholders must be thoroughly consulted, and nothing should proceed without this consultation being done.

Interview Transcript for Participant 4- 1 reference coded [5,37% Coverage]

Reference 1 - 5,37% Coverage

Our departmental policy should have a section that explicitly outline how stakeholder engagement should be conducted in the implementation of infrastructure projects.

Interview Transcript for Participant 5- 1 reference coded [5,63% Coverage]

Reference 1 - 5,63% Coverage

It is important to really consult as widely as possible but have guidelines that will assist progress. Absence of guidelines or standards may derail or cause the project to fail.

Interview Transcript for Participant 6- 1 reference coded [3,47% Coverage]

Reference 1 - 3,47% Coverage

To the level of meetings and communication with stakeholders for influencing implementation

Interview Transcript for Participant 7- 1 reference coded [4,23% Coverage]

Reference 1 - 4,23% Coverage

Stakeholder engagement should be standardized, regulated and applied in all projects to ensure successful implementation of projects.

Interview Transcript for Participant 8- 1 reference coded [2,56% Coverage]

Reference 1 - 2,56% Coverage

Standardization and regulating stakeholder engagements might not be feasible as projects are unique by nature.

4.3.2.7 *Theme 7-Status of Stakeholder Engagement*

Interview Transcript for Participant 1- 3 references coded [1,19% Coverage]

Reference 1 - 0,14% Coverage

Very big gap

Reference 2 - 0,71% Coverage

Stakeholder engagement in my unit is not properly conducted

Reference 3 - 0,34% Coverage

Sometimes it's not even done

Interview Transcript for Participant 2- 2 references coded [2,87% Coverage]

Reference 1 - 1,45% Coverage

I don’t think enough has been done in terms of engaging stakeholders

Reference 2 - 1,43% Coverage

Lack of education in how the community can be involved in a project

Interview Transcript for Participant 3- 2 references coded [2,80% Coverage]

Reference 1 - 0,91% Coverage

Stakeholder engagement is very minimal

Reference 2 - 1,89% Coverage

Project team does not comply with some of the construction industry regulations

Interview Transcript for Participant 4- 1 reference coded [3,17% Coverage]

Reference 1 - 3,17% Coverage

End-users are not consulted, leading to variation orders, thus escalating the cost of the project.

Interview Transcript for Participant 5- 1 reference coded [1,84% Coverage]

Reference 1 - 1,84% Coverage

Currently the participation of stakeholders is low to zero.

Interview Transcript for Participant 6- 1 reference coded [2,39% Coverage]

Reference 1 - 2,39% Coverage

There is unwillingness to participate from other stakeholders

Interview Transcript for Participant 7- 1 reference coded [2,51% Coverage]

Reference 1 - 2,51% Coverage

The status of the stakeholder engagement in the projects I'm part of is good.

Interview Transcript for Participant 8- 1 reference coded [7,58% Coverage]

Reference 1 - 7,58% Coverage

An organization needs to improve quality service to its customers, all those that are part of the process needs to be roped in for process review so that the by -in is secured and the ownership is critical component at the operational level, so if they are not part of the project the stakeholders will not give their best.

4.3.3 Comparing Themes

4.3.3.1 The expectations of stakeholders under the theme ***"Expectations of Stakeholder Engagement"*** led to the theme ***"How to Improve Stakeholder Engagement".*** The comparison of the two themes is borne out providing stakeholders the liberty to suggest improvements on the issues they raise as expectations when they are being engaged as stakeholders on the public infrastructure

project. The significance of linking the two themes is to offer a direct response on the 'expectations of stakeholder engagement" through the suggested methods of "how to improve stakeholder engagement". The figure below outlines the comparison of the two themes in detail:

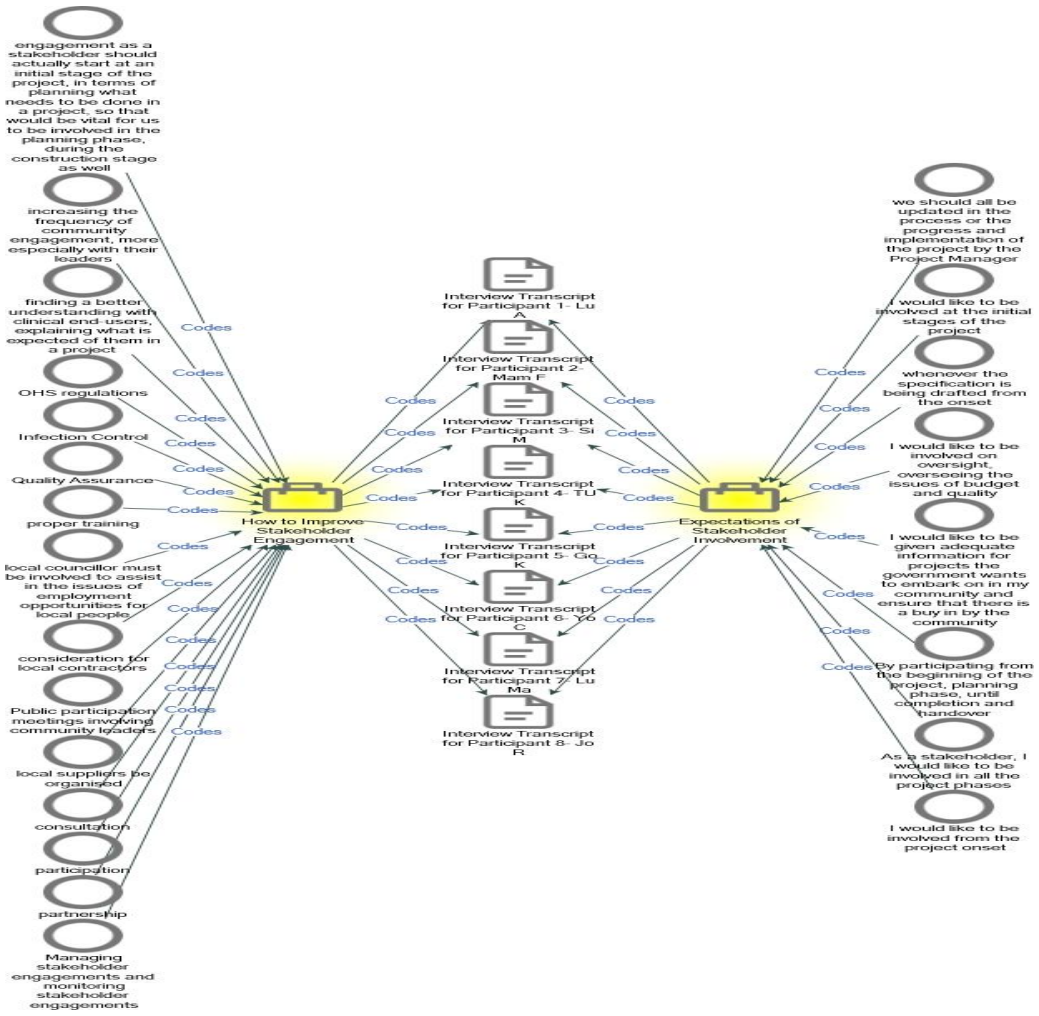


Figure 4.3.3.1: Theme Comparison 1

4.3.3.2 Participants further raised critical issues pertaining to stakeholder engagement, thus the theme ***"Critical Issues Observed"*** also contributed to the theme ***"How to Improve Stakeholder Engagement"***. The figure below depicts how stakeholder engagement can be improved focusing mainly on the critical issues observed by stakeholders as a hindrance to an improved stakeholder engagement process in the implementation of public infrastructure projects:

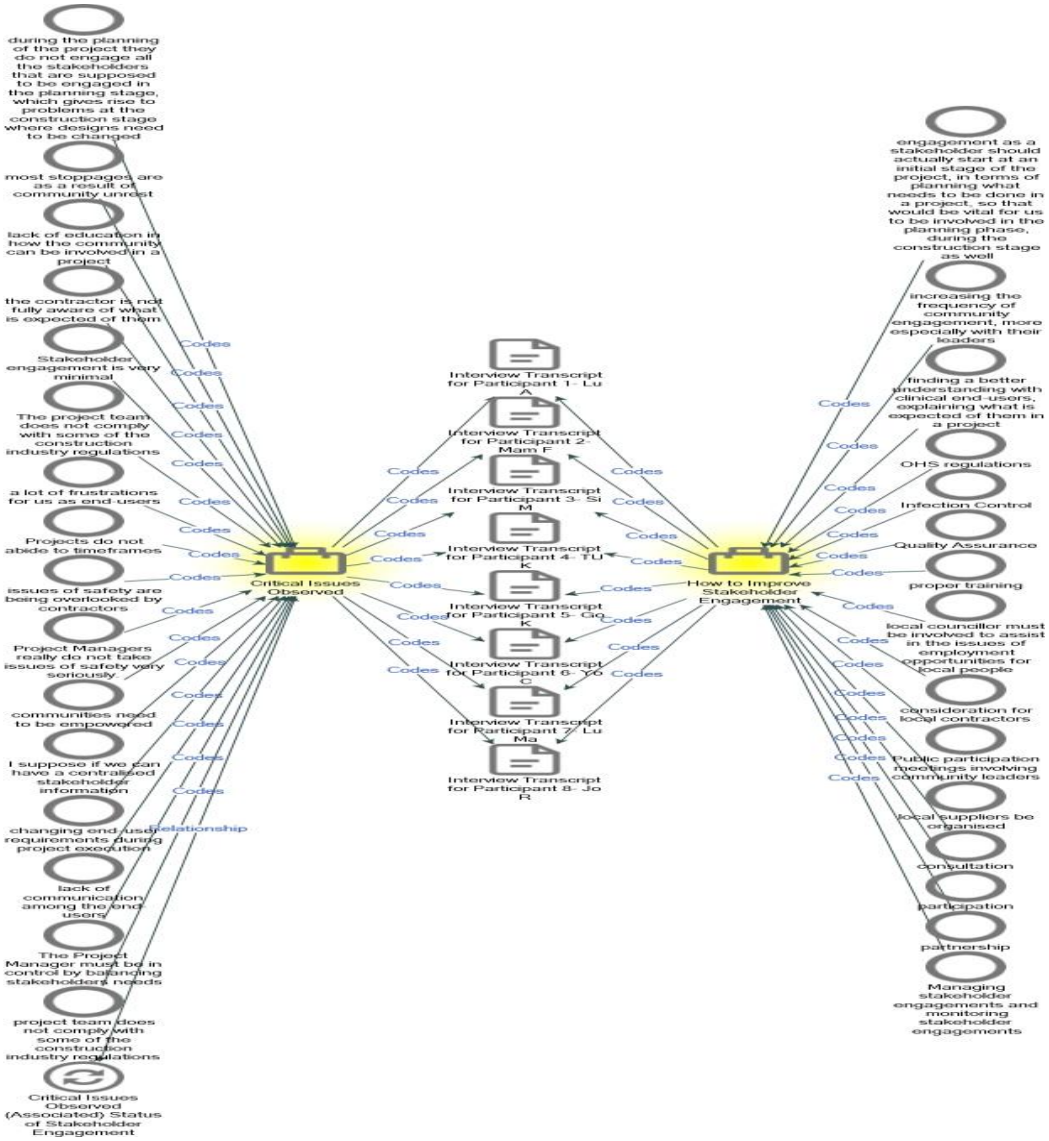


Figure 4.3:3.2: Theme Comparison 2

4.3.3.3 To develop a stakeholder engagement checklist, it is imperative to identify the key stakeholders that should be integrated into the checklist, hence the relationship of the theme "Stakeholder Engagement Checklist" and the theme "Key Stakeholders". The figure below shows the key stakeholders as mentioned by the study participants and the checklist requirements relevant to the stakeholder engagement needs as recommended by the participants:

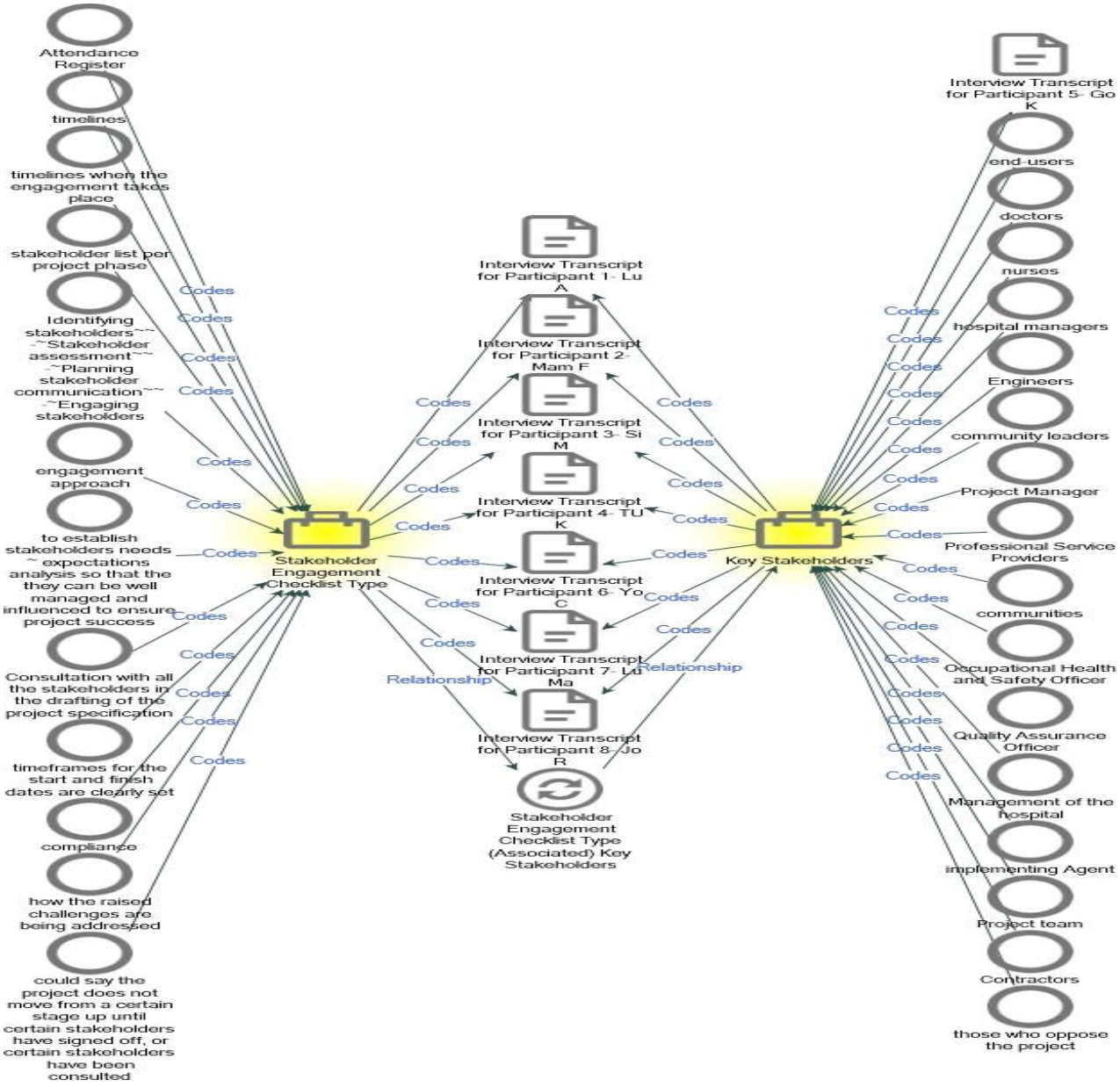


Figure 4.3.3.3: Theme Comparison 3

4.3.4 Mind Mapping

4.3.4.1 Mind Mapping for Stakeholder Engagement Improvement

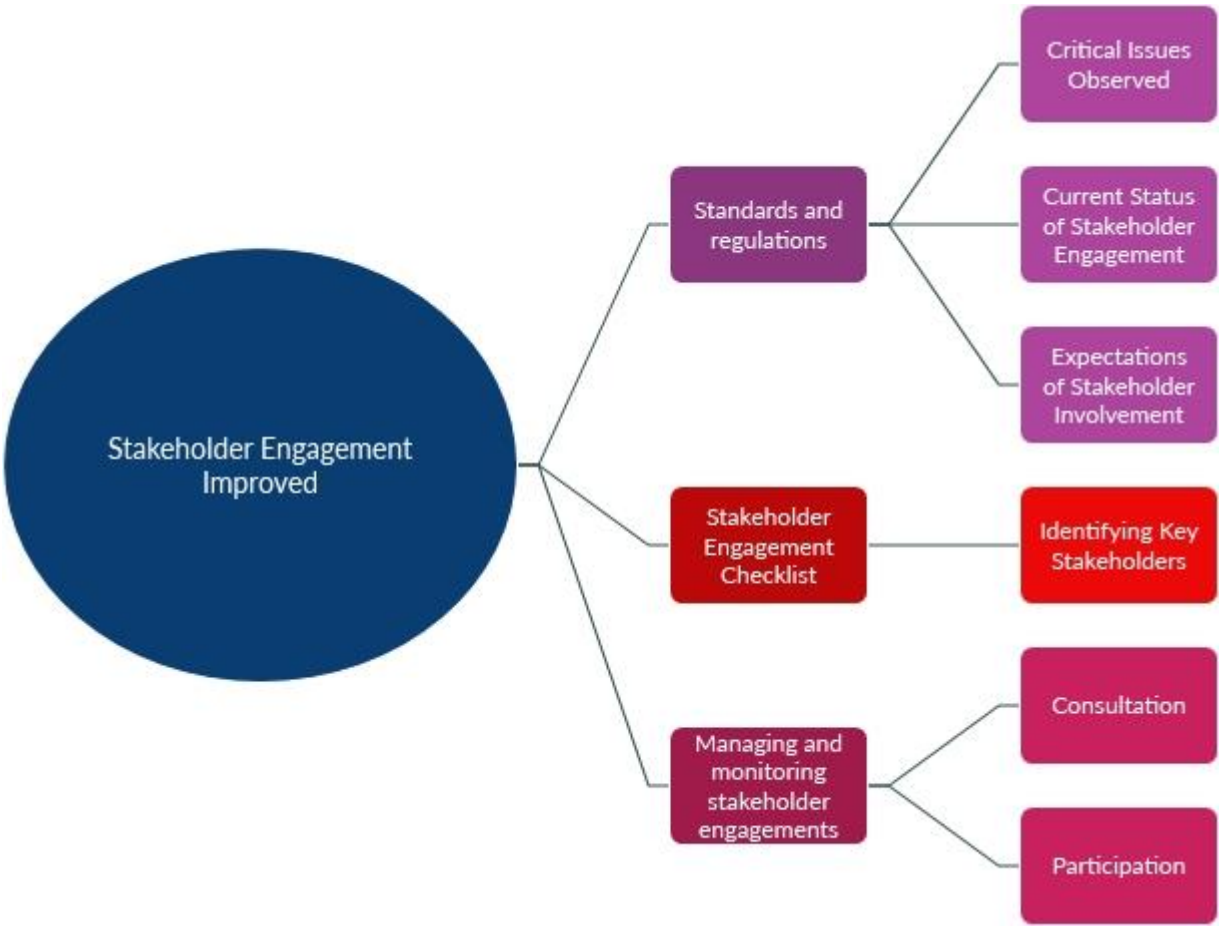


Figure 4.3.4: Mind Mapping for Stakeholder Engagement Improvement

The figure above depicts the mind map showing how stakeholder engagement would be improved as a result of the interventions suggested on the data analysis. Critical issues observed, current status of stakeholder engagement and expectations of stakeholder involvement led to standards and regulations that are developed to enforce stakeholder engagement in all public infrastructure projects, thus duly improving stakeholder engagement. Identifying key stakeholders helps in developing stakeholder engagement checklists that suit all stakeholders and contribute to stakeholder satisfaction. The project team further arranges regular consultations with stakeholders and encourage stakeholders to participate in all decisions that impact on the project outcome. The stakeholder engagement sessions are managed and monitored to track their performances and fitness for purpose.

Therefore, standards and regulations, stakeholder engagement checklist, as well as managing and monitoring stakeholder engagements, are the three main contributors to the improvement of stakeholder engagement on the delivery of public infrastructure projects.

4.4 Summary

This Chapter focused on the qualitative analysis of the data collected from the semi-structured interviews. The results were then transcribed to further develop themes and categories to fulfill the objectives of the study. Eight respondents participated in the study. Themes were analysed and interpreted in conjunction with the literature presented in Chapter 2 of this study. Results of this study have shown that participants are aware of the key stakeholders, the level of involvement and that there is still lack of sufficient stakeholder engagement. The mind map towards the end of the chapter reduced the number of the main contributors to the improvement of stakeholder engagement to standards and regulations, stakeholder engagement checklist, as well as managing and monitoring stakeholder engagements.

The next Chapter presents conclusion to the research findings based on the research objectives and provide recommendations of the study.

CHAPTER 5: CONCLUSIONS, RECOMMENDATIONS, LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

5.1 Introduction

This chapter presents concluding remarks from the research findings in relation to the study area. This is followed by linking these findings to the study of objectives. The chapter concludes by providing recommendations, limitations and suggestions for further research.

5.2 Conclusion to the research findings

This section discusses how the objectives of the study were met.

The objectives of the study were to:

- Identify the consequences of a lack of stakeholder engagement
- Identify the key stakeholders in the public infrastructure projects
- Determine how government engages with stakeholders
- Determine stakeholders' expectations with regards to involvement
- Determine how stakeholder engagement can be improved

5.2.1 To identify the consequence of a lack of stakeholder engagement

According to Zawera (2019) failure to identify stakeholders can result in a detrimental effect to the project. Results shows that the elements that emanated from how participants assessed stakeholder engagement status were having showing improper conduction, lack of awareness, misaligned, incompliant, having no consultation, low participation, difficult, having limited resources, inadequate representation, lacking willingness, and needing to improve indicated by one of 8 participants. Thus the study results revealed that the issue of community unrest arises as a result of not properly engaging communities. Furthermore, not engaging stakeholders at the initial stages of the project leads to variation orders when stakeholders later point out the crucial items of the project that were left out, thus escalating the cost of the project, and unwillingness to participate from other stakeholders due to lack of empowerment on how they can be involved in a project. Zarewa (2019)

indicated that one of the barriers of stakeholder engagement is lack of sufficient engagement resulting in the project delivered without engaging various stakeholders, consequentially the project could be stopped for lengthy periods due to legal disputes and community protests (Zarewa, 2019). Thus it is imperative that sufficient stakeholder engagement be carried out throughout the phases of the project life cycle to prevent this predicament as revealed by the results of this study. Participants contribution resulted in the following elements to indicate the importance of the stakeholder engagement and ensure that it happens: develop a stakeholder engagement checklist by verifying if engagement happen, ensure compliance and proper planning, checklist sign-off must be done by stakeholder attending meeting, timelines be adhered to, attendance register must be done for ever stakeholder engagement, address challenge being faced by the communities, consultation with the community leaders, organise local assistance, development plan, listing of all the stakeholders for their clear identification, ensure communication, and building coalition with stakeholders to ensure that the project run smooth and not stopped due to lack of proper engagement.

5.2.2 To identify the key stakeholders in the public hospital infrastructure projects

Majority of participants could identify who the key stakeholders are from the results of the study. Results showed that participants listed the key stakeholders for the different projects they are involved as End-users and Customers (3 of 8) followed by communities and hospital Management (2 of 8). At the same time, other participants said the stakeholders were Officers, Communities, Contractors, and Sponsors indicated by one of 8 respectively. Other themes included the implementing Agent. These results align to Fortunato & Hric (2016), who listed stakeholders in most of the projects as:

Communities: These are the local people using the public infrastructure at the tail-end of the project delivery value chain. They use infrastructure like a public hospital for medical purposes as patients and as potential employees to boost local employment and economy. Fortunato & Hric (2016) defines communities as groups of vertices with a higher probability of connecting with each other than with other groups.

Project Team: This is a team of project management and built environment salaried officials involved in the day-to-day running of the project from start to finish. Association for Project

Management (2019) refers to a project team as a "group of people working together in collaboration or cooperation towards a common goal".

Hospital Management: This is the executive management team tasked with the strategic decision making process for the successful running of the public hospital.

Hospital Chief Executive Officer: The chief executive officer acts as the accounting officer for the public hospital.

Facility Management Unit Manager: This is the facilities management unit manager responsible for the day-to-day smooth operations of all the hospital's facilities and maintenance of immovable assets.

Project Manager: The project manager manages the project team and provides oversight on all project-related activities and strives to steer the project in the right direction.

Community Leaders: These are individuals tasked with the responsibility of being the voice of the community and the go-to people when engaging communities on any project-related issues.

Contractors: Contractors are appointed through the government tender system to directly construct or maintain public infrastructure as detailed on the specification.

Professional Service Providers: These are appointed by government to provide professional services for the project. These services range from engineering designs, architectural services, quantity surveying to engineering services.

Doctors: Doctors provide medical services to patients who come from surrounding communities. They are key to ensuring that the public infrastructure project is perfectly integrated with the medical services provided at the hospital to ensure fit for purpose.

Nurses: Nurses are the backbone of a public hospital as the frontline operational staff who ensure that patients have a hospitable stay at a hospital from arrival to departure. They assist doctors when attending to patients and their experience and expertise come in handy at addressing nursing-specific project details and medical equipment installations.

5.2.3 To determine how government engages with stakeholders

From the results of this study, elements that emanated from the stakeholder involvement were minimal engagement, gap, improper conduction of stakeholder engagement, lack of awareness, misalignment, lack of compliance, no consultation, low participation, difficult public consultation, limited resources, inadequate representation, lack of willingness, as well as need for quality improvement. The concerns raised by participants were that stakeholder engagement is not properly conducted; sometimes it is not even done, and that the project management team does not properly engage communities. Another area of concern was that Government's engagement lacks education and detail on how end-users and communities can be involved to add value to the project. Thus the results of the study indicated that stakeholders should be involved from the project onset and receive regular updates at every project phase. Adequate and clear information should be communicated to stakeholders to ensure the progress of the project. According to Stakeholder Participation in Bertoldi et al. (2018), the nature of involvement should be information and education, feedback, consultation and extended consultation.

5.2.4 To understand stakeholder expectations on projects

The study shows that stakeholders expect the following from the project: to receive regular updates on the project progress, project implementation to be facilitated, involvement in the project specification, to exercise oversight throughout the whole project, to be provided with adequate project information, as well as being involved at all the phases of the project. Zawera (2019) opines that one of the barriers of stakeholder management is lack of involvement by stakeholders. Stakeholder influence is positive if the project management team engages stakeholders right from the initial stages where the end-user requirements are stated clearly and the project management team understands them. Involving end-users at the later stages of the project results in cost escalations caused by end-users requesting variations to the project.

The participants' overwhelming endorsement of both the stakeholder engagement checklist and the standardisation of stakeholder engagement bears testimony on the need to address lack of stakeholder engagement in the delivery of public infrastructure projects. The barriers to stakeholder engagement by Zawera, (2019) further supports that failure of involvement of numerous stakeholders' demands

meticulousness in dealing with different and conflicting personalities. Failure to assess levels of influence of various stakeholders can result in misinterpretation of the level of stakeholder influence could result in sending irrelevant information to various stakeholders posing further detrimental effects to the project. This is also in addition to failure to understand stakeholders' needs and expectations can cause misalignment and the onus is upon the project manager to clearly understand and confirm stakeholders' needs and expectations (Zawera,2019).

Thus, the study's results are in line with the literature, confirming that there are serious consequences that can easily lead to project stop due to lack of stakeholder engagement and majority of participants did indicate the level of difficulty these has come with in the projects they are involved in. Participants also suggested standardising stakeholder engagement in the department's policy, guidelines and regulations to ensure that it is properly delivered consistently.

Results indicated that participants are aware and could identify with the key stakeholders for the projects however, there is still lack of regular stakeholder engagements such that proper sign off to these projects is not fully done when it is time to execute the project since some stakeholders may refuse to sign since they were not engaged.

Results show that there is a need for government to properly engage with stakeholders and develop regulations to. Participants suggested that stakeholder engagement be standardised and guidelines be provided.

Based on the literature, there is no doubt that stakeholders have a degree of influence on projects. Results show that oversight, implementation and progress may not happen without the influence of stakeholders. Thus, it is imperative that stakeholders be involved from the project onset and engagements be conducted regularly.

5.2.5 To determine how stakeholder engagement can be improved

Elements that emerged as key to the improvement of stakeholder engagement in the public hospital infrastructure projects are: public participation, stakeholder involvement, planning involving all key stakeholders, consultation, community engagement, regulations, providing continuous assistance to stakeholders, considerations for local community, supporting community leaders in forging

community stability, partnerships with communities, onsite rollouts, management of stakeholder engagements, monitoring of progress, as well as giving the checklist.

Lehtinen & Aaltonen (2020) advocates for a government-based solution to stakeholder engagement improvement. A government-based solution supports the suggestions proposed by respondents in calling for government regulations and guidelines to enforce stakeholder engagement in public hospital infrastructure projects.

5.3 Gap in the South African public sector infrastructure environment

It is a positive step for South Africa that Square Kilometre Array (SKA) (SKA, 2018) developed a stakeholder monitoring tool for its stakeholder engagement programme. The stakeholders referred to by SKA (2018) are the members of the community the SKA project affects directly, such as farms in the vicinity of the project, surrounding towns' natives, business establishments, non-governmental organisations, churches, as well as the municipality. The objectives of the SKA's stakeholder engagement programme are to be responsive, inclusive, impartial, transparent and to show respect to the stakeholders (SKA, 2018). The stakeholder engagement programme by SKA is borne out of courteousness and could either be discontinued or improved at the discretion of SKA management structure. It therefore could be deduced that there is no standard or regulation guiding the stakeholder engagement programme other than SKA's good gesture.

The stakeholder engagement plan developed for the Mokolo/Matlabas Catchment and Crocodile (West) classification project as published by the Department of Water Affairs (Republic of South Africa, 2013) was explored. The department adopted the communication plan format and the document outlines events and the schedule of those events. Once again, although the document was called a stakeholder engagement plan, it had the hallmarks of a communication plan more than a stakeholder engagement plan. The significant differences in the stakeholder engagement plans of the two projects in the South African context show that stakeholder engagement in the delivery of public infrastructure projects is not standardised, hence living the task of engaging stakeholders to the discretion of a service provider appointed to deliver the project. Furthermore, the role played by Construction Industry Development Board (CIDB) is to ensure that community involvement is done to benefit local communities around labour involvement and enterprise development, thus still not

having yet focused on the stakeholder engagement dynamics experienced on the phase to phase project execution.

The South African government needs to regulate stakeholder engagement in the delivery of public infrastructure projects to ensure compliance and outline strict enough punitive measures to deal with non-compliance. A standardised stakeholder engagement monitoring tool that is built-in to the project management plan should form part of the project deliverables. Furthermore, a stakeholder engagement checklist should be in the list of documents for signing off at the end of each project stage prior to progression to the next stage of the project. Therefore, having a standardised stakeholder engagement monitoring tool and a checklist at the end of each project stage would allow stakeholder engagement to form an integral part in the delivery of public infrastructure projects.

5.4 Research findings' response to the aim

The aim of this research reads as follows:

This research aims to address lack of stakeholder engagement in delivering public infrastructure projects.

Below is the list of findings in response to the above aim:

The issue of community unrest that arises as a result of not properly engaging communities is a huge cause for concern. Moreover, the project team does not comply with some of the construction industry regulations due to the impression that end-users are not technically-minded, therefore they won't be able to identify that there was manipulation. That, therefore, leads to a lot of frustrations for end-users when raising these issues only to be regarded as costly and time-wasting. Some of the critical issues in the project environment are the changing end-user requirements during project execution and lack of communication among end-users.

The study has identified methods of improvement in addressing the lack of stakeholder engagement in delivering public infrastructure projects. Those methods of improvement are development of checklists to be complete at the end of each project stage, prohibiting the project from moving into the next stage if compliance is not met, as well as standardisation and regulation of stakeholder engagement.

5.5 Conclusions

This research managed to uncover the synergy between literature and empirical evidence. There is evidence with regards to the need to address lack of stakeholder engagement in the delivery of public infrastructure projects. While there is a general consensus between project managers and end-users on the issue of standardising and regulating project stakeholder engagement, there is great difficulty when it comes to how standardisation and regulation should be done.

This research succeeded in identifying lack of education and empowerment as one of the key contributing factors to the lack of stakeholder engagement. Stakeholders lost interest in the project meant to benefit them because nobody took time to educate and empower them with knowledge of the project. The study has found that due to lack of knowledge of the project, key stakeholders and end-users choose to either sit out project engagement sessions or disrupt them. Completion of stakeholder engagement checklists at the end of each project stage to confirm compliance was also identified as a tool to improve stakeholder engagement.

Prior to conducting this study, the assumption was that lack of stakeholder engagement was a two-way problem between the project manager and end-users. However, the research findings have since identified that end-users tend to disagree on project-related issues among themselves.

This, therefore, concludes that lack of stakeholder engagement in the delivery of public infrastructure projects is a multi-dimensional problem that needs to be addressed using an open-minded approach and regular engagements with stakeholders results in an improved level of stakeholder satisfaction and improves stakeholder engagement.

5.6 Recommendations

Development of a standard stakeholder engagement checklist is needed to guide project managers on how to engage project stakeholders, considering that end-users must be educated on the dynamics of the project so that their engagement is participatory and progressive rather than a tick-box exercise. Additionally, by including stakeholder engagement as one of the infrastructure project deliverables at the planning stage of the project, government would be allowing service providers tendering for

the project to adequately plan and cost for this deliverable. Therefore, project stakeholder engagement must form part of the tender contract.

Government should start engaging stakeholders at the pre-feasibility stage of the project and throughout all stages of the project, and especially engage end-users even after the project has been practically completed to record end-users' feedback on the functionality and benefits of the project delivered. Furthermore, Government should also impose a regulation that deems non-compliance with the responsibilities and requirements of stakeholder engagement for all parties to the construction contract as a breach of contract.

5.7 Limitations

This study, by virtue of being cross-sectional, could not develop and monitor the effectiveness of a stakeholder engagement checklist over a period of time and across different public infrastructure projects. Findings of this research cannot be statistically tested and extended to a wider population due to being limited to participants' personal experiences and knowledge. The focal aspects of the research could not be quantified since this qualitative research analysis delved into the understanding and social dynamics of participants in relation to stakeholder engagement. Generalisability of the findings would not be viable due to the sample size of the population.

5.8 Suggestions for further research

- Further research needs to be done with a fully developed stakeholder engagement checklist piloted across various public infrastructure projects to test its effectiveness and functionality.
- It is suggested that research is done to explore practicality of the regulated stakeholder engagement in the public infrastructure projects.
- There is a need for conducting case studies on the cost-benefit analysis between training end-user stakeholders on the dynamics and technicalities of the project prior to project implementation, and consulting end-user stakeholders as the project progresses.
- Research on whether project managers can optimally function with an added responsibility of managing stakeholder engagement against allocating the management of stakeholder engagement to a dedicated appointee other than a project manager.

- Quantitative study with more structured questions and a bigger population and sample based on the findings of this study can aid further conclusive results.
- Furthermore, future research may have to look at developing a system that prohibits a government construction project from progressing to the next stage if stakeholder engagement requirements at the current stage are not complied with.

5.9 Summary

This Chapter presented concluding remarks from the research findings in relation to stakeholder engagements within the infrastructure projects in the public sector. Study findings were summarised in line with the study objectives. Recommendations, limitation and further study were also presented. Results showed that there is a need for a standardised and regulated stakeholder engagement throughout the process of executing infrastructure projects in the public sector. Previous research has shown that failing to engage stakeholders effectively, in most part, contributes to service delivery protests escalating in the South African communities. Implementing recommendation from this study may eradicate these challenges.

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APPENDIX 1

Interview Transcript for Participant 1

1. **Researcher:** You don't have to tell me your name, please just tell me your portfolio
2. **Participant:** I'm a Project Manager, working for Gauteng Department of Health, managing health technology projects
3. **Researcher:** Thank you very much, Sir. My name is Malibongwe Zuma. I am researching a topic, "Analysing the Contribution of Stakeholder Engagement in Public Infrastructure Projects at Gauteng Department of Health. So, you are free to ask follow up questions, Sir. This is just a semi-structured interview. You are therefore free to stop me at any time for rephrasing the question. Then, at the end of the questions, if there is something more that (you)would like to add, you are more than welcome to do that.
4. **Researcher:** So, the first question, who do you understand to be the key stakeholders in the projects that you participate in?
5. **Participant:** Ok, eh..., my understanding of key stakeholders in my projects would be end-users, which those will be customers of the project in a way. In my field those people would be doctors, nurses, and hospital managers. And then, because this is a healthcare project, we also have end-users from infrastructure management side, GDID (Gauteng Department of Infrastructure Development), those will be Engineers, Project Managers, and then we also have consultants. (Taking a deep breath) and.., since it is Government institution, we have community leaders representing the community, since we are delivering for the public.
6. **Researcher:** Ok...ok, thank you. How would you like to be involved in a project as a stakeholder?
7. **Participant:** As a stakeholder in a project, I believe my involvement should be... we should all be updated in the process or the progress and implementation of the project by the Project Manager. So, this is to ensure that we do not miss any eh... eh... information or important task that needs to be done by different stakeholders. So as a stakeholder I believe we should all be updated on the progress and information of the project, yes...
8. **Researcher:** Ok, thanks. To what degree should stakeholder engagement be standardised and regulated according to your own understanding?

9. **Participant:** Eh, to me it is very important that it has to be standardised. Your question is saying to what degree, I would say to the degree that it should form part of the project programme in terms of...or we should say it should form part of the contract of the project, that stakeholders need to be engaged, and it should be standardised how the interaction and the management of stakeholders is going to conducted.
10. **Researcher:** Thanks, thanks. What aspects of stakeholder engagement do you suggest apply exclusively to your locality?
11. **Participant:** Ok, aspects...maybe can you just broaden that question? Give me more clarity.
12. **Researcher:** Yes, for instance, stakeholder engagement can be very broad, so, which ones do you think apply to your environment. Mind you, we do not want to say one size fits all. So, which aspects of stakeholder engagement do you feel focus should be at?
13. **Participant:** I will believe, in my field, our engagement as a stakeholder should actually start at an initial stage of the project, in terms of planning what needs to be done in a project, so that would be vital for us to be involved in the planning phase, during the construction stage as well, because our role is to ensure that we have the necessary equipment that will be installed in that project or building. So, when we are involved from planning, we will know what type of equipment we need to buy, eh, and what the quantities are. And during construction, eh, it will help me to know when do I need to install that equipment. Therefore, it will be from planning all the way to construction.
14. **Researcher:** So, you are basically saying is it's easier for you if you are part of the planning phase, even when they are installing the equipment you know what they are actually installing is what has been planned for and it is properly installed?
15. **Participant:** Yes, and to also ensure that the equipment we are going to procure meets the needs of a customer.
16. **Researcher:** Thanks. Alright, if you were to contribute to the development of a stakeholder engagement checklist, what would be your contribution?
17. **Participant:** I would say, with the experience of how projects are run in my unit, you get a lot of times where projects are completed but some stakeholders are complaining that they were not informed from planning. So, I believe, if there could be in that checklist, if they could say the project does not move from a certain stage up until certain stakeholders have

signed off, or certain stakeholders have been consulted. There should be a way of verifying that these stakeholders have been engaged in certain stages. For example, at a planning stage, before they go over to procurement, they need to make sure that they tick on that planning stage before they pass the gate to the next stage that these stakeholders have been engaged, and it can be verified that they have been engaged. So, there should be that sort of a system, a gateway system that stakeholders have been engaged and you can move to the next one. But, if you have not engaged them you cannot move to the next stage. So, that's what I think could work.

18. **Researcher:** That's interesting, thanks! What would be your assessment of the status of stakeholder engagement in the projects you are part of?

19. **Participant:** Oh, I think there is a very big gap in the way stakeholder engagement is done. In a way, I can say stakeholder engagement in my unit is not properly conducted, sometimes it's not even done. For example, we're having issues of having some projects completed without medical equipment, and we are only told at the handover that equipment is needed. Therefore, the building cannot be used without medical equipment, which then needs to be procured using different consultants, leading to cost overruns and delays to the project delivery, hence affecting the customers and community negatively.

20. **Researcher:** Thanks. This is our last question, Sir. What have you observed to be critical issues in relation to stakeholder engagement in your environment?

21. **Participant:** Critical issues, eh...during the planning of the project they do not engage all the stakeholders that are supposed to be engaged in the planning stage, which gives rise to problems at the construction stage where designs need to be changed, walls broken to cater for equipment that was not thought of earlier.

22. **Researcher:** Thank you very much for your inputs and contribution to this interview. Is there anything you would like to add over and above what we have just discussed?

23. **Participant:** Yes, I think this stakeholder engagement thing is a very important issue, especially in my unit. So, it would be nice to have a process where stakeholder engagement is actually standardised, or in the language we use in Government..." Gazetted", gazetted to be part of our project management systems, because all the projects we are running here, they can speak about stakeholder engagement, but it is not part of the project document. So, I think

if they can put more emphasis in that it will go a long way in completing our projects successfully.

24. **Researcher:** Thank you very much Sir, we really appreciate your inputs.

CODING INTERVIEW 1

1. **Key Stakeholders**

- Doctors
- Nurses
- Hospital Manager
- Implementing Agent
- Engineers
- Project Manager
- Consultants
- Community Leaders

2. **Involvement Preference**

- I should be updated regularly on all the progress
- Initial stage of the project
- Construction stage all the way to delivery to the customer

3. **Stakeholder Standardisation and Regulation**

- It should form part of the project programme
- It should form part of the project contract
- How stakeholder engagement is conducted should be standardised

4. **Critical Aspects of Stakeholder Engagement Applying Exclusively to your Locality**

- All relevant stakeholders should be engaged at the planning stage to avoid problems of rework and design changes.

5. **Contribution to Stakeholder Engagement Checklist**

- Signing off by all key stakeholder to confirm consultation at the end of each stage

6. **Current Status of Stakeholder Engagement**

- Stakeholder engagement not properly done, sometimes not done at all

APPENDIX 2

Interview Transcript for Participant 2

1. **Researcher:** Please introduce yourself and your portfolio.
2. **Participant:** I am the HT Project Manager, GDOH
3. **Researcher:** What do you understand to be key stakeholders in the projects that you participate in?
4. **Participant:** The key stakeholders would be the end-users, so those are the people who will ultimately use the equipment, the Project Manager from GDOH, the team from the Implementing Agent, and the Professional Service Providers. In some projects, communities form part of the key stakeholders, not all projects.
5. **Researcher:** Thank you very much. How would you like to be involved in a project as a stakeholder?
6. **Participant:** Um, ok, I would like to be involved at the initial stages of the project, [pause]because the decisions that are taken there help you to better understand why the project would move the certain way. So, it could be right at the beginning, because some requirements of the project are better addressed at the beginning than later in the project.
7. **Researcher:** Ok, thanks. To what degree should stakeholder engagement be standardised and regulated?
8. **Participant:** That is a tricky one because stakeholder engagement is not the same across the board. However, I think at the beginning of the project, at the end of each stage and at the project handover stakeholder engagement should take place and be emphasized.
9. **Researcher:** What aspects of stakeholder engagement do you suggest apply exclusively to your locality?
10. **Participant:** Community engagement. It would be increasing the Count of community engagement, more especially with their leaders. It would also be finding a better understanding with clinical end-users, explaining what is expected of them in a project.
11. **Researcher:** If you were to contribute to the development of a stakeholder engagement checklist, what would be your contribution?

12. **Participant:** So, I would want to see the timelines when the engagement takes place, that is, every time there is an engagement a format that looks like an attendance register must be developed to confirm that engagement. I would also like to see how the raised challenges are being addressed.
13. **Researcher:** Thank you. What would be your assessment of the status of stakeholder engagement in the projects that you are part of?
14. **Participant:** I would say, you know, I don't think enough has been done in terms of engaging stakeholders. It would always come back to the communities who have the power to affect the project. For instance, in the projects that I am involved in, most stoppages are as a result of community unrest. This is due to lack of education in how the community can be involved in a project, you know, their understanding and their expectations. Moreover, in some instances you find that the contractor is not fully aware of what is expected of them, or there is a misalignment between what they came to deliver and what is expected of them.
15. **Researcher:** Ok, thanks. What have you observed to be critical issues in relation to stakeholder engagement in your environment?
16. **Participant:** It is, basically, the issue of community unrest that arises as a result of not properly engaging communities, so, it is key that they are kept in the loop of what is happening.
17. **Researcher:** Thank you. Is there anything that you would like to add over and above what we have discussed?
18. **Participant:** I think your topic interesting in that some of these issues, as a Project Manager, you see them but you don't really pay too much attention in playing your part to get them resolved. So, it is a bit of an eye opener in that when sitting with other colleagues we can try and tackle some of these issues.
19. **Researcher:** Thank you very much, your inputs have been of great value.

CODING INTERVIEW 2

1. **Key Stakeholders**

- Communities (4)
- Implementing Agent Team (4)
- Project Manager Gauteng Department of Health (4)
- Professional Service Providers (4)

2. **Involvement Preference**

- Initial Stages of the project (6)

3. **Stakeholder Engagement Standardisation and Regulation**

- Tricky, because stakeholder engagement is not the same across the board (8)
- It should be emphasized at the project start, end of each stage and handover stage (8)

4. **Critical Aspects of Stakeholder Engagement Applying Exclusively to your Locality**

- Engage Community Leaders (10)
- Engage Clinical End-users (10)

5. **Contribution to Stakeholder Engagement Checklist**

- Timelines of engagement and attendance register to confirm (12)
- Addressing of Challenges (12)

6. **Current Status of Stakeholder Engagement**

- Not enough engagement (14)
- Stoppages as a result of community unrest (14)
- Lack of education on how community should be involved in a project (14)
- Contractors not sure of what is expected of them (14)

APPENDIX 3

Interview Transcript for Participant 3(Si M)

1. **Researcher:** Can you please tell me what your portfolio is?
2. **Participant:** My portfolio is a Facility Manager, overseeing the running of infrastructure projects and making sure that they comply with specifications.
3. **Researcher:** Who do you understand to be key stakeholders in the projects that you participate in?
4. **Participant:** The question is very broad. Those would be the Accounting Officer, who is the CEO, the Unit Manager (In charge of the ward), the Facility Manager, Occupational Health and Safety Officer, Quality Assurance Officer.
5. **Researcher:** How would you like to be involved in a project as a stakeholder?
6. **PARTICIPANT:** I would like to be involved in a project whenever the specification is being drafted from the onset, not to be given a specification that that is completed and then I am told to monitor. We need to engaged at the first go as an end-user, so that we can outline our needs so that they can form part of the specification.
7. **Researcher:** Thank you. To what degree should stakeholder engagement be standardised and regulated in the infrastructure projects, according to your opinion?
8. **Participant:** The regulation should state that prior to starting the project, the end-user and all other stakeholders must be thoroughly consulted, and nothing should proceed without this consultation being done.
9. **Researcher:** Thanks. What aspects of stakeholder engagement do you suggest apply exclusively to your locality?
10. **Participant:** These would be OHS regulations, Infection Control, Quality Assurance.
11. **Researcher:** Thanks. If you were to contribute to the development of a stakeholder engagement checklist, what would be your contribution?

12. **Participant:** It would be to ensure that there is compliance at all times, proper planning of the project, timeframes for the start and finish dates are clearly set. Should there be challenges, stakeholders must be properly engaged.
13. **Researcher:** What would be your assessment of the status of stakeholder engagement in the projects that you are part of?
14. **Participant:** Stakeholder engagement is very minimal. The project team does not comply with some of the construction industry regulations due to the impression that end-users are not technically-minded, therefore they won't be able to identify that there was manipulation. That, therefore, leads to a lot of frustrations for us as end-users because when we raise these issues they are regarded as costly and time-wasting.
15. **Researcher:** Thank you. What have you observed to be critical issues in relation to stakeholder engagement in your environment?
16. **Participant:** Projects do not abide to timeframes, issues of safety are being overlooked by contractors. Project Managers really do not take issues of safety very seriously.
17. **Researcher:** Thank you very much. Is there anything that you would like to add or comment on over and above what we have just discussed?
18. **Participant:** It is the issue of capacitating end-users on the issues of infrastructure regulations, such as proper training that will allow us to actively participate on the technical issues of infrastructure.
19. **Researcher:** Thank you very much for your inputs Sir, we really highly appreciate the time you spent on this interview.

CODING INTERVIEW 3

1. **Key Stakeholders**

- Ward Manager (Unit Manager) [Interview 3(4)]
- Occupational Health and Safety Officer [Interview 3(4)]
- Hospital Manager (CEO) [Interview 3(4)]
- Facility Management Unit Manager [Interview 3(4)]
- Quality Assurance Manager [Interview 3(4)]

2. **Involvement Preference**

- Initial stage of the project [Interview 3(6)]
- When the specifications are being drafted (6)

3. **Stakeholder Standardisation and Regulation**

- The regulation should state that no work can proceed without thorough stakeholder consultation (8)

4. **Critical Aspects of Stakeholder Engagement Applying Exclusively to your Locality**

- Occupational Health and Safety (10)
- Infection Control (10)
- Quality Assurance (10)

5. **Contribution to Stakeholder Engagement Checklist**

- Addressing of Challenges with Stakeholders (12)

6. **Current Status of Stakeholder Engagement**

- Stakeholder engagement is very minimal (14)
- Concerns of compliance regulations by end-users are dismissed as costly and time-consuming (14)

7. **Key Stakeholders**

- Ward Manager (Unit Manager) [Interview 3(4)]
- Occupational Health and Safety Officer [Interview 3(4)]
- Hospital Manager (CEO) [Interview 3(4)]
- Facility Management Unit Manager [Interview 3(4)]
- Quality Assurance Manager [Interview 3(4)]

8. Involvement Preference

- Initial stage of the project [Interview 3(6)]
- When the specifications are being drafted (6)

9. Stakeholder Standardisation and Regulation

- The regulation should state that no work can proceed without thorough stakeholder consultation (8)

10. Critical Aspects of Stakeholder Engagement Applying Exclusively to your Locality

- Occupational Health and Safety (10)
- Infection Control (10)
- Quality Assurance (10)

11. Contribution to Stakeholder Engagement Checklist

- Addressing of Challenges with Stakeholders (12)

12. Current Status of Stakeholder Engagement

- Stakeholder engagement is very minimal (14)
- Concerns of compliance regulations by end-users are dismissed as costly and time-consuming (14)

APPENDIX 4

Interview Transcript for Participant 4(Tu K)

1. **Researcher:** Can you please explain your portfolio and involvement in the public infrastructure projects?
2. **Participant:** I am the Deputy Director; I am involved in the Infrastructure Maintenance Projects.
3. **Researcher:** Thank you. Who do you understand to be key stakeholders in the projects that you participate in?
4. **Participant:** Our Stakeholders would be the Management of the hospital, the implementing Agent, the Project Manager from Head Office.
5. **Researcher:** Thank you. How would you like to be involved in a project as a stakeholder?
6. **Participant:** I would like to be involved on oversight, overseeing the issues of budget and quality.
7. **Researcher:** Thank you. To what degree should stakeholder engagement be standardised and regulated?
8. **Participant:** Our departmental policy should have a section that explicitly outline how stakeholder engagement should be conducted in the implementation of infrastructure projects.
9. **Researcher:** Thank you. What aspects of stakeholder engagement do you suggest apply exclusively to your locality?
10. **Participant:** The local councillor must be involved to assist in the issues of employment opportunities for local people, there must be consideration for local contractors.
11. **Researcher:** if you were to contribute in the development of a stakeholder engagement checklist, what would your contribution?
12. **Participant:** Consultation with all the stakeholders in the drafting of the project specification.
13. **Researcher:** Thanks. What would be your assessment of the status of stakeholder engagement in the projects that you are part of?
14. **Participant:** End-users are not consulted, leading to variation orders, thus escalating the cost of the project.

15. **Researcher:** Thank you. What have you observed to be critical issues in relation to stakeholder engagement in your environment?
16. **Participant:** Proper consultation with all stakeholders involved when major decisions are taken from time to time, and how they would have impact on the project.
17. **Researcher:** Thank you very much Sir, we have now come to the end of our interview. Is there anything you would like to add or comment on?
18. **Participant:** No, we have basically covered most of the things.
19. **Researcher:** Thank you very much for your time.

CODING INTERVIEW 4

1. **Key Stakeholders**

- Hospital Manager (4)
- Implementing Agent (4)
- Project Manager (4)
- Community Leaders (4)

2. **Involvement Preference**

- Oversight (6)

3. **Stakeholder Standardisation and Regulation**

- Departmental policy should have a section explicitly dealing with stakeholder engagement in the infrastructure projects (8)

4. **Critical Aspects of Stakeholder Engagement Applying Exclusively to your Locality**

- Proper consultation must be done with key stakeholders when major decisions are taken (16)
- Engagement with community leaders in addressing the issues of employing local people and considering local contractors (10)

5. **Contribution to Stakeholder Engagement Checklist**

- Consulting key stakeholders in the drafting of specifications (12)

6. **Current Status of Stakeholder Engagement**

- End-users are not consulted, resulting in variation orders and escalating costs (14)

APPENDIX 5

Interview Transcript for Participant 5(Go K)

1. **Researcher:** Can you please explain your portfolio and involvement in the public infrastructure projects?
2. **Participant:** I am the Hospital CEO; I am involved in the day to day running of the hospital, including infrastructure projects.
3. **Researcher:** Who do you understand to be key stakeholders in the projects that you participate in?
4. **Participant:** My key stakeholders are communities where the projects are implemented.
5. **Researcher:** Thank you. How would you like to be involved in a project as a stakeholder?
6. **Participant:** I would like to be given adequate information for projects the government wants to embark on in my community and ensure that there is a buy in by the community, and we are made to understand that we have taken care of the assets even after completion.
7. **Researcher:** Thank you. To what degree should stakeholder engagement be standardised and regulated?
8. **Participant:** The reality is that people cannot be all satisfied by the outcome of every project, it is important to really consult as widely as possible but have guidelines that will assist progress. Absence of guidelines or standards may derail or cause the project to fail.
9. **Researcher:** Thank you, wow. What aspects of stakeholder engagement do you suggest apply exclusively to your locality?
10. **Participant:** Public participation meetings involving community leaders should be encouraged to ensure stability and avoiding stoppages of projects.
11. **Researcher:** Thanks. If you were to contribute in the development of a stakeholder engagement checklist, what would be your contribution?
12. **Participant:** I would advise that the local suppliers be organised and ensure to be part of the solution in all the listed projects and have Integrated Development Plan for ensuring that they participate in the economic development of their community.

13. **Researcher:** Thanks. What would be your assessment of the status of stakeholder engagement in the projects that you are part of?
14. **Participant:** Currently the participation of stakeholders is low to zero. Moreover, the lockdown made consultation with the public even more difficult.
15. **Researcher:** Thank you. What have you observed to be critical issues in relation to stakeholder engagement in your environment?
16. **Participant:** The communities need to be empowered so that they understand where they can be engaged and when they should allow specialised services to be conducted by professional companies.
17. **Researcher:** Thank you very much Sir, is there anything you would like to add or comment on?
18. **Participant:** No, not really, I suppose we covered everything.
19. **Researcher:** Thank you very much for your time, it was great.

CODING INTERVIEW 5

1. **Key Stakeholders**

- Communities (4)

2. **Involvement Preference**

- To be given adequate project information to share with the community (6)

3. **Stakeholder Standardisation and Regulation**

- Consultation guidelines must be standardised (8).

4. **Critical Aspects of Stakeholder Engagement Applying Exclusively to your Locality**

- Public participation meetings (10)
- Community empowerment (16)

5. **Contribution to Stakeholder Engagement Checklist**

- Records of public participation meetings (12)

6. **Current Status of Stakeholder Engagement**

- Stakeholder participation is low (14)

APPENDIX 6

Interview Transcript for Participant 6(Yo C)

1. **Researcher:** Can you please explain your portfolio and involvement in the public infrastructure projects?
2. **Participant:** I am the Facility Management Unit Manager, involved in the day to day running of the hospital's infrastructure projects and maintenance.
3. **Researcher:** Who do you understand to be key stakeholders in the projects that you participate in?
4. **Participant:** End-Users.
5. **Researcher:** Thank you. How would you like to be involved in a project as a stakeholder?
6. **Participant:** By participating from the beginning of the project, planning phase, until completion and handover
7. **Researcher:** Thank you. To what degree should stakeholder engagement be standardised and regulated?
8. **Participant:** To the level of meetings and communication with stakeholders for influencing implementation
9. **Researcher:** Thank you. What aspects of stakeholder engagement do you suggest apply exclusively to your locality?
10. **Participant:** Eh...consultation, participation, partnership, on-site rollouts and planning
11. **Researcher:** Thanks. If you were to contribute in the development of a stakeholder engagement checklist, what would be your contribution?
12. **Participant:** That would be, uhm, stakeholder list per project phase, contact names, and engagement approach
13. **Researcher:** That's interesting! What would be your assessment of the status of stakeholder engagement in the projects that you are part of?
14. **Participant:** There is limited resources, political factors sometimes come into play, no adequate representation, and there is unwillingness to participate from other stakeholders
15. **Researcher:** Thank you. What have you observed to be critical issues in relation to stakeholder engagement in your environment?

16. **Participant:** I suppose if we can have a centralised stakeholder information, and both consultative and cooperative approaches.
17. **Researcher:** Thank you very much Sir, is there anything you would like to add or comment on?
18. **Participant:** Nothing from my side Sir.
19. **Researcher:** Thank you very much for your time.

CODING INTERVIEW 6

1. **Key Stakeholders**

- End-Users (4)

2. **Involvement Preference**

- From the beginning to handover stage (6)

3. **Stakeholder Standardisation and Regulation**

- Meetings and communication must be standardised (8).

4. **Critical Aspects of Stakeholder Engagement Applying Exclusively to your Locality**

- Consultation (10)
- Participation (10)

5. **Contribution to Stakeholder Engagement Checklist**

- Stakeholder list per project phase and contact details (12)
- Engagement approach (12)

6. **Current Status of Stakeholder Engagement**

- Inadequate representation of stakeholders (14)
- Unwillingness to participate (14)
- Political factors (14)
- Limited resources for adequate engagement (14)

APPENDIX 7

Interview Transcript for Participant 7

1. **Researcher:** Can you please explain your portfolio and involvement in the public infrastructure projects?
2. **Participant:** I am the Resident Engineer, involved in the day to day running of the hospital's engineering services, infrastructure projects and maintenance of immovable assets.
3. **Researcher:** Who do you understand to be key stakeholders in the projects that you participate in?
4. **Participant:** Hospital's EXCO, FMU, Maintenance committee, Project team, end-users/customers, Contractors
5. **Researcher:** Thank you. How would you like to be involved in a project as a stakeholder?
6. **Participant:** As a stakeholder, I would like to be involved in all the project phases, from feasibility phase; to concept and detailed design phases; to execution phase; to commissioning and hand-over phases.
7. **Researcher:** Thank you. To what degree should stakeholder engagement be standardised and regulated?
8. **Participant:** Stakeholder engagement should be standardized, regulated and applied in all projects to ensure successful implementation of projects.
9. **Researcher:** Thank you. What aspects of stakeholder engagement do you suggest apply exclusively to your locality?
10. **Participant:** Managing stakeholder engagements and monitoring stakeholder engagements.
11. **Researcher:** Thanks. If you were to contribute in the development of a stakeholder engagement checklist, what would be your contribution?
12. **Participant:** My contribution would be in the following:

- Identifying stakeholders
- Stakeholder assessment
- Planning stakeholder communication
- Engaging stakeholders

13. **Researcher:** Cool! What would be your assessment of the status of stakeholder engagement in the projects that you are part of?
14. **Participant:** The status of the stakeholder engagement in the projects I'm part of is good.
15. **Researcher:** Thank you. What have you observed to be critical issues in relation to stakeholder engagement in your environment?
16. **Participant:** The critical issues in my environment are the changing end-user requirements during project execution and the lack of communication among the end-users.
17. **Researcher:** Thank you very much Sir, is there anything you would like to add or comment on?
18. **Participant:** I would like to say this interview was a great way to reflect on the issues pertaining to stakeholders, well done!
19. **Researcher:** Thank you very much, we appreciate your contribution Sir.

CODING INTERVIEW 7

1. **Key Stakeholders**

- Hospital's EXCO (4)
- FMU (4)
- Maintenance committee (4)
- Project team (4)
- End users/customers (4)
- Contractors

2. **Involvement Preference**

- All phases of the project (6)

3. **Stakeholder Standardisation and Regulation**

- All projects to follow the same standard of engagement (8)

4. **Critical Aspects of Stakeholder Engagement Applying Exclusively to your Locality**

- Changing end-user requirements (16)
- Lack of communication among different end-users (16)

5. **Contribution to Stakeholder Engagement Checklist**

- Stakeholder identification (12)
- Stakeholder assessment (12)
- Stakeholder communication (12)

6. **Current Status of Stakeholder Engagement**

- Stakeholder Engagement is good (14)
- Lack of communication amongst end-users themselves (16)

APPENDIX 8

Interview Transcript for Participant 8

1. **Researcher:** Can you please explain your portfolio and involvement in the public infrastructure projects?
2. **Participant:** I am the Chief Artisan, supervising over the implementation of the hospital's infrastructure projects and maintenance.
3. **Researcher:** Who do you understand to be key stakeholders in the projects that you participate in?
4. **Participant:** In my view the key stakeholders in a project will be the project Manager, end user client, project sponsor, those who oppose the project and project executing team.
5. **Researcher:** Thank you. How would you like to be involved in a project as a stakeholder?
6. **Participant:** I would like to be involved from the project onset, as participation or inputs at this stage are very critical the end user requirements need to be stated clear from the beginning.
7. **Researcher:** Thank you. To what degree should stakeholder engagement be standardised and regulated?
8. **Participant:** Standardization and regulating stakeholder engagements might not be feasible as projects are unique by nature. Take for example, in one of the province community was up in arms against the establishment of a mine, community was divided as some part of community was saying this will bring in new developments and employment opportunities, other community members were saying the mine will impact on the farming and have negative impact on the natural appearance of the nature on their village. It is therefore important that the project Manager must bear persuasion and command skills to deal with issues like this, highlighting the significance of time and cost value in project delays is critical and engagements must consider these factors.
9. **Researcher:** Thank you. What aspects of stakeholder engagement do you suggest apply exclusively to your locality?
10. **Participant:** Eh...consultation and participation.

11. **Researcher:** Thanks. If you were to contribute in the development of a stakeholder engagement checklist, what would be your contribution?
12. **Participant:** My contribution will be to establish stakeholders needs / expectations analysis so that the they can be well managed and influenced to ensure project success. The other important element will be to build / form coalition among the stakeholders, this is to gain power which will provide authority to project Manager to move the project forward.
13. **Researcher:** Wow! What would be your assessment of the status of stakeholder engagement in the projects that you are part of?
14. **Participant:** As the project comes to being to address a need, my evaluation of stakeholder engagement in a project is vital. For an example an organization needs to improve quality service to its customers, all those that are part of the process needs to be roped in for process review so that the by -in is secured and the ownership is critical component at the operational level, so if they are not part of the project the stakeholders will not give their best.
15. **Researcher:** Thank you. What have you observed to be critical issues in relation to stakeholder engagement in your environment?
16. **Participant:** The Project Manager must be in control by balancing stakeholders needs, project progress time frames are very essential and project budget is of utmost Importance. Because if you are to increase sales for example you need to be time-conscious.
17. **Researcher:** Thank you very much Sir, is there anything you would like to add or comment on?
18. **Participant:** No I'm ok Sir.
19. **Researcher:** Thank you very much for your time.

CODING INTERVIEW 8

1. Key Stakeholders

- End-users [Interview 8(4)]
- Project manager [Interview 8(4)]
- Project sponsor [Interview 8(4)]
- Those who oppose the project [Interview 8(4)]
- Project executing team [Interview 8(4)]

2. Involvement Preference

- From the onset. [Interview 8(6)]

3. Stakeholder Standardisation and Regulation

- Not feasible because projects are unique. [Interview 8(8)]

4. Critical Aspects of Stakeholder Engagement Applying Exclusively to your Locality

- Project Progress [Interview 8(10)]
- Project Budget [Interview 8(10]

5. Contribution to Stakeholder Engagement Checklist

- Needs/Expectations analysis [Interview 8(12)]

6. Current Status of Stakeholder Engagement

- Quality needs to improve [Interview 8(14)]
- Getting a buy-in from all stakeholders is key for them to give their best [Interview 8(14)]

20. **Researcher:** Thank you very much for your inputs Sir, we really highly appreciate the time you spent on this interview.