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UNIVERSITY OF THE WITWATERSRAND

FACULTY OF SCIENCE

School of Geography, Archaeology and Environmental Sciences

DOES PUBLIC PARTICIPATION FACILITATE THE DEVELOPMENT OF A COMPREHENSIVE SOCIAL IMPACT ASSESSMENT PROCESS IN SOUTH AFRICA? A STUDY OF THE CAROLINA TOWN COMMUNITY IN MPUMALANGA

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Dissertation submitted in fulfilment of the requirements for the master's degree in the Faculty of Science Department of Geography.

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January 2024

DECLARATION:

I, John Gilfillan, Student Number: 389549 am a student registered for MSc in Geography.
I hereby declare the following:

1. I am aware that plagiarism is a criminal and academic offence.
2. I confirm that the work submitted for assessment is my original work except where I have indicated otherwise.
3. I have followed the departmental guidelines in referencing the thoughts and ideas of others.

Signature: 

John Gilfillan Date: 18/ 01/2024

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ABSTRACT

The inadequate integration of social and economic dimensions within impact assessments, particularly in the context of mining activities is particularly worrisome. The lack of a standardized and inclusive model, coupled with insufficient consideration of local knowledge, contributes to conflicts and dissatisfaction in mining communities. Public participation, crucial for a holistic assessment, faces hurdles like awareness gaps, language barriers, and inadequate community representation. These challenges hinder the achievement of sustainable outcomes in mining development projects. This study assesses the current state of public participation in Social Impact Assessment (SIA) processes within mining communities in Carolina.

This study employed a qualitative approach. Purposive and snowball sampling techniques were used to identify the relevant participants for this study. Drawing on diverse perspectives from technocrats, community members, homeowners, and stakeholders, the research unveils insights into the effectiveness of public engagement between the Carolina community and mining operatives. After engaging with the participants ultimately a total of 45 participants were identified. Data collection tools were the use of the focused group interviews and semi-structured questionnaires.

. The findings reveal a predominant dissatisfaction among participants, with 70% expressing the ineffectiveness of public participation in SIA. The study identifies a lack of inclusivity, transparency, and communication in the current approach, as community members feel excluded from decision making processes. Motivations for engagement centre on the crucial need for job opportunities provided by mining operations, reflecting the community's economic aspirations. However, expectations extend beyond employment to include broader community development aspects, indicating a desire for positive impacts resulting from mining activities.

Further exploration into the role of public participation in identifying community challenges highlights a significant lack of awareness and understanding among participants. The study underscores language barriers, geographical distance to meeting venues, and a perceived absence of tangible outcomes as significant challenges. Participants express frustration with the current state of public participation, emphasizing the need for transparency, genuine commitment, and accountability from mining companies. The research concludes with recommendations for a more inclusive, accessible, and communicative public participation process to address community challenges effectively. It calls for improved education, language inclusivity, and enhanced communication channels to foster meaningful engagement and

ensure a more equitable and sustainable future for the Carolina community affected by mining activities.

Keywords: Carolina community; Community Engagement; Public Participation; Social Impact Assessment (SIA); Sustainable Development

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List of Abbreviations

AMD	Acid Mine Drainage
ASGM	Artisanal Gold Miners
CALLM	Chief Albert Luthuli Local Municipality
DMR	Department of Mineral Resources
DRC	Democratic Republic of Congo
EACOP	East African Crude Oil Pipeline
EIA	Environmental Impact Assessment
ESIAS	Environmental and Social Impact Assessments
EU	European Union
FIPC	Free Prior Informed Consent
IAIA	International Association for Impact Assessment
IAPs	Important Affected Parties
IDP	Integrated Development Plan
IFC	International Finance Corporation
IUCMA	Inkomati-Usuthu Catchment Management Agency
GRI	Global Reporting Initiative
MPRDA	Mineral and Petroleum Resources Development Act
NEPA	National Environmental Policy Act
NEMA	National Environmental Management Act
NGOs	Non-Governmental Organisations
NSW	New South Wales
SDGs	Sustainable Development Goals
SIA	Social Impact Assessment
SIAR	SIA Reports
SIMP	Social Impact Management Plan
SLPs	Social and Labour Plans
UN	United Nation
WAMUA	Women Affected by Mining United in Action

CHAPTER ONE

FRAME OF REFERENCE

1.1 Background to the study

The United Nations General Assembly (1987) described sustainable development as a form of progress that addresses the needs of the current generation without placing a limit on the ability of future generations to fulfil their requirements (Owusu-Ansah and Adjei-Acquah, 2020). Many of the Sustainable Development Goals (SDGs) set by the United Nations (UN) for 2030 contribute to monitoring industrial extracted resources, fuelling the manufacturing sector and creating jobs through responsible mining and adhering to the integrity of the environment in which developments take place (Mancini and Sala, 2018). Although mining investments provide employment and economic opportunities which are sustainable for the economic sector, the production of mineral materials can also cause negative environmental and social impacts, obscuring other sustainable development goals such as climate action and good health (Mancini and Sala, 2018; Soyapi, 2017). This can, in turn, affect the economic environment in which people are dependent on jobs. It was therefore very important to view development as a holistic system in which the environment, the social aspects and the economic aspects are systemically intertwined.

A particular industry that has a history of causing environmental and socio-economic concerns is coal mining (Azapagic, 2004; Leonard, 2017a). Although it has a key role in the economy of many countries, creating employment and wealth, it has, however, over the last 50 years, seen a trajectory of effects from coal plants owing to coal`s high pollution levels (Azapagic, 2004). This may affect the balance of the social, environmental, and economic interconnection of a designated development setting. For instance, in Zambia's Copper Belt region, polluted ground water from tailings dams is causing detrimental impacts on farming (Von der Heyden *et al*., 2004). These environmental and social effects from development activities affect economic aspects such as irrigation for agriculture or fishing (Chidzungu, 2019).

Considering the above, mining developments generate both positive and negative impacts for host communities, with special reference to post-mining communities (Morrice and Colagiuri, 2013). Therefore, Environmental Impact Assessments (EIAs) aim to predict, analyse and interpret the associated impacts of mining developments on the environment.

However, parts of the EIA within the United States National Environmental Policy Act (NEPA) failed to address the social and economic aspects of development because of bias towards the biophysical environment (De Lange, 2013). EIA is defined as "an activity used to identify and predict the impact on the biophysical environment and on man's health and well-being, of legislative proposals, policies, programmes, projects and operational procedures, and to interpret and communicate information regarding the effects" (Dara *et al*., 2017). Man's health is a priority within the EIA, yet the biophysical environment took preference in the assessment process before NEPA was re-evaluated socially. However, the social crisis in the assessment process is still the case in many countries. During the 2015 Global Child Forum in Southern Africa, emphasis were made on the widespread deficiency in Environmental Impact Assessments (EIAs) in thoroughly assessing the entire consequences of a mining project. This includes concerns like human rights abuses intensified by occupational health diseases (Leonard, 2017b).

Therefore, it was very important that human factors be accounted for within the EIA process (Leonard, 2017c and Van Heerden, 2016). In this regard, EIA incorporated a Social Impact Assessment (SIA) dealing with the socio-economic environment, human-health, and cultural effects, which became a part of project planning and policy evaluation (Van Heerden, 2016). SIA has been incorporated into the formal planning and approval processes in several countries through the EIA, to evaluate and categorize major developments and social effects (Hildebrandt and Sandham, 2014). Hildebrandt and Sandham (2014) suggested that SIAs are integral components of EIAs and serve to ensure that the social aspects of sustainability are acknowledged as an inherent outcome of the EIA process. This statement describes how the promotion of a more sustainable human environment is a positive outcome of development (Chidzungu, 2019). SIA is particularly relevant for mining companies and mining affected communities because the scale and duration of resource extraction projects usually create a wide range of complex social impacts, linked to environmental impacts (Lodhia, 2018). This supports the idea of SIAs grounded in sustainable development, interlinking biophysical, human, and economic dimensions.

Conflict and dissatisfaction can arise from community members who feel the direct effects from the socio-environmental mining impacts, and who feel the need to voice their opinions and play an active role in their surrounding development (Leonard, 2017b). Furthermore, there is wide consensus among practitioners and environmental scientists analysing the Social Impact Assessment (SIA) process, that there is the need for more thorough social investigation and

inclusion of local knowledge (Vella, 2018). Therefore, there is no one-size-fits-all model for an impact assessment that can take everyone's interests into complete consideration to benefit a localised area. There should be represented input from a local community on how development could really benefit them and associated Interested and Affected Parties (IAPs) . Joyce and Macfarlane (2001) raised an argument in support, state "the social reality seen to be subjective, bounded and defined by social rules and meanings formed by the actors within it''. Notable in this quote is a highlighted participatory approach of actors and change agents generating meaning. To harmonize economic, social, and environmental needs of an area associated with development and public issues requires active citizen participation (Leonard, 2017c).

Public participation is a process developed within the SIA structure since post-Apartheid 1994, and it has been influenced by international practices (Leonard, 2017c and Vella, 2018). The components of public participation in leadership capacity for more independence in decision making amongst affected and involved stakeholders, and to encourage and include local government in participatory processes (Cooke *et al.*, 2003; Diemel and Hilhorst, 2018). Thus, public participation in the SIA process can allow individuals to have a say and actively influence their desired outcomes from a large development such as a mine (Cooke *et al.*, 2003; Diemel and Hilhorst, 2018). There was a need for Public Participation Process as communication allows interest groups and public to express concerns and ideas in the SIA stages as expressed below (Omenge et al., 2019; Molewa, 2017):

I. Creating the scope of the SIA (screening and scoping)
II. Providing specialists with knowledge about the site (scoping)
III. Calculating the relative significance of the likely impacts (scoping)
IV. Proposing mitigation measures (assessment and report)
V. Ensuring that the SIA is objective, truthful and complete (assessment and report)
VI. Monitoring any conditions of the development agreement (follow-up) (Omenge *et al*., 2019; Molewa, 2017).

Public participation is also about a greater recognition from local communities who have a wealth of local knowledge acquired through trial and error over a long period. It is especially applicable for developing countries where the term "indigenous" is used in context within development activities. This knowledge can be integrated into the scientific knowledge of SIA and help develop a management plan that is beneficial to both developers and communities (Lyhne *et al*., 2017). The knowledge of information validated by the World Bank suggests that public participation can benefit environmental and social awareness and sustainability (Lyhne

et al., 2017; Vella, 2018). Thus, SIAs provide a platform for indigenous communication, which enhances a community's capacity building, thus promoting relevant skills development for post mining communities.

In view of the above, there are benefits of public participation for community members and stakeholders. However, this is not always the case, given appointments of unqualified and technically unskilled officials linked to the development processes (Mphele, 2012). Further consequences occur if public participation is not done following the correct procedures, in which companies use the process against best practices for their own benefit. An example is, using the international protocol stages of participation which do not take each locality into consideration. Education, awareness, and illiteracy, for instance, are all valuable and needed for one to participate effectively. This is often the case in developing countries.

There are cases in South Africa were collecting and sharing information to gain understanding of the community values and aspirations, and facilitating effective public participation has been insufficient (Leonard, 2018). Such cases within South Africa stem from EIA regulations promulgated in 2006. These excluded communities, since the EIA reports did not require the consultants to provide them in a language of choice to the public. This greatly compromises tackling the socio-economic impacts likely to be raised by communities (Leonard, 2017a). Additional instances of public involvement in Mpumalanga reveal a lack of community awareness concerning the coal mining industry's influence over knowledge and access to resources for local communities (Chidzungu, 2019). In 2013, various societal groups penned a letter to the Acting Chairperson of the Portfolio Committee on Mineral Resources, addressing mining activities in Mpumalanga. The groups asserted that both mining companies and the Department of Mineral Resources were negligent in involving, facilitating, and notifying interested and affected parties about decisions related to mining development (Leonard, 2018). Consequently, all this puts an upper limit for the public to bring the socio-economic aspects to the fore. There is limited data and evidence regarding the participation of communities in impact assessments and decision-making processes (Meissner and Everingham, 2021).

The consequence of this in Mpumalanga is weak local governance in the mining development sector. This hinders creation of an environmentally sensitive community and conservation areas (Leonard, 2018). The Worldwide Fund on Coal documents and Water Futures highlight that inter-departmental cooperation has not been as effective as expected for mining development within Mpumalanga (Cilliers and Retief, 2017; Leonard, 2017c). The interested and affected parties are treated as if they have been involved in the planning and design phase of the project,

yet their involvement is at the end of the project planning cycle (Marais *et al*., 2017). This has led to the effectiveness of the participatory process generally being unclear and, in many cases, falling below expectations. The situation is exacerbated by a scarcity of empirical evidence, particularly in South Africa, showcasing the fundamental factors that could contribute to inadequate public participation (Leonard, 2017a; Leonard, 2018 and Cilliers and Retief, 2017). Despite the long-standing interest in these issues, particularly pertaining to Africa and communities close to mines, studies have been slow in coming and research remains underdeveloped (Diemel and Hilhorst, 2018). One reason for this is that, in general, African countries do not collect detailed subnational economic and social data (Dang and Carletto, 2018).

1.2 Thematic Consideration

SIAs are a tool used globally to evaluate the potential effects of projects on communities and individuals. These assessments aim to ensure that development projects contribute to sustainable development goals (de Wet, 2019). SIA is a movement, unlike an EIA, which is termed a 'practice', and is more towards a paradigm consisting of a body of knowledge. There are different levels at which to understand the term SIA (Lodhia, 2018). This means that a SIA can have different interpretations or may be a source of confusion to governments and practitioners who are implementing the body of knowledge in a local context (Kruger, and Sandham, 2018). Such confusion occurs where SIAs are considered only late in the process of a proposed activity which, by the time a SIA is requested, it is almost certain that the activity will proceed (Leonard, 2017b). This questions the SIA effectiveness within the context of National Environmental Management Act (NEMA) (Van Heerden, 2016). Therefore, the SIA practice and the tools within it, such as public participation, should be evaluated. Although SIA project documents frequently include community participation, these are all too often neglected (Diemel and Hilhorst, 2018). The need to enhance public participation in SIA and related alternative ways, are central themes in Impact Assessment literature, particularly mining literature. According to literature, globally, public participation in SIAs often falls short of the requirements of best practice in the movement towards sustainable development, particularly for disadvantaged and marginalized communities (Sandham *et al*., 2019).

In Carolina, public participation practices have been implemented, but there exists limited research on the nature of these participation processes. There is also a scarcity of research exploring the perspective of public participation within the context of SIAs for coal mines, both

on a global scale and specifically in South Africa. Chidzungu conducted research in 2019 related to the social impact assessment in Carolina, providing valuable insights into the existence of public participation practices within the town for reference. Hallowes and Butler (2005) have highlighted that institutions are frequently organised in a manner that reduces the decision-making authority and participatory chances for civil society, leading to the exclusion of individuals from economic benefits. Concurrently, local communities and the environment bear the externalised costs of production. One such is pollution, which can lead to environmental contamination and adverse health effects. This raises the question of the necessity and effectiveness of current participation principles, especially in regions like Mpumalanga. Such concerns prompt a re-evaluation of the policies outlined in the Environmental Management Act and the quality of local governance. Consequently, there is a need for further investigation into the practices of SIAs. It is imperative to analyse current practices, learn from past shortcomings, and enhance the understanding of public participation within the SIA process as we move forward in Carolina community.

Considering the information provided, this study aimed to examine the involvement of the Carolina community in SIAs. Of particular interest was to understand whether community participation has the potential to influence the development of comprehensive social impact assessment processes and outcomes that are aimed at contributing to sustainable social and economic transformation of communities adjacent to mining entities.

Participation plays a crucial role in addressing socio-economic issues. It offers diverse views, perspectives, and voices. Therefore, this study was anchored on the theme of participation, which was explored within the broader context of sustainable community development. According to Chidzungu's research in Carolina town in 2017 and 2019, there were shortcomings in the perspectives of IAPs involved in the public participation process. Furthermore, there is a dearth of literature examining the viewpoints of community members regarding public participation, and whether it meets their expectations within the framework of SIAs. This was a matter of significant interest and concern for all IAPs, as the health and well-being of the Carolina community members should be of utmost importance.

This aligns with the provisions outlined in the health and safety acts within the NEMA (Leonard, 2017c).

1.3 Research questions used for the study.

Given the observations outlined above, the research process was directed by the following questions:

i. How comprehensive are public participation processes in facilitating a SIA, when dealing with mining communities? such as the Carolina community.

ii. In what ways are current public participation practices effective in identifying problems, needs and values of the communities subjected to impacts of mining in the Carolina mining community?

iii. To what extent is public participation significant in understanding the impact of mining on the surrounding natural environments?

iv. What are the barriers to public participation in the SIA document and its implications for sustainable development? A case study within the Carolina community

1.4 Research aim and objectives.

Considering the research questions outlined above, the aim of this study was to investigate how public participation can be used as an effective and comprehensive tool in the development of social impact assessments in mining communities, with Carolina as a case study.

The objectives of this study were to:

i. To explore how comprehensive are public participation processes in facilitating a SIA and the contribute to an effective SIA, in the Carolina community.

ii. To know to what extent the impacts of poor public participation within the SIA process on the Carolina community have, in the context of health, social life, and inclusivity.

iii. To examine the barriers hindering Public Participation in the SIA document and evaluate their implications for sustainable development: A Case Study in the Carolina Community.

1.5 Theoretical Consideration and Literature Review

According to Leonard (2017b) participation in every community engagement process is important and particularly in the context of the SIA process. This is supported by Gibson (2000), who argues that SIAs are only meaningful if they have had significant levels of public participation. Therefore, public participation is important because it facilitates a comprehensive impact assessment by having the public involved in the development process, thereby

mitigating any negative unwanted consequences that can affect communities' well-being. In fact, Leonard (2017c) is of the view that participation is the bedrock for any effective and sustainable SIA process. It is important therefore to speculate here that every SIA must be based on public participation, where views of the public and all stakeholders are captured and incorporated in development of all implementations of SIA. A detailed account of these themes has been presented in Chapter 2.

Mancini and Sala (2018) argue that SIAs are important because they monitor and analyse the social consequences of planned interventions (policies, programs, plans, projects) as well as processes of social change influenced by such interventions. This perspective is additionally affirmed by Leonard (2017a), who portrays SIAs as tools utilised to assess potential environmental and social impacts of project developments and aid in the decision-making process. Chidzungu (2019) is of the view that SIAs deal with adaptive management of policies and projects, which inform the operation of the planned intervention. A detailed account of all the different views and engagement about participation within the context of SIA has been presented and discussed effectively in Chapter 2, which contains the theoretical consideration and literature review. Having a literature review is important because it identifies what is already known, but also carries a function to identify gaps in knowledge. The first section will discuss issues regarding the global perspective of SIAs.

SIAs in developed countries, such as the United States of America and the United Kingdom, set standards for effective deliverance (McCullough, 2017). However, SIA's effectiveness within developing countries has not shared the same success. In this case, it is important to discuss and analyse the literature of SIA effectiveness globally. This discussion involves an initial overview of the practice of SIA, highlighting the key role that community engagement and participation play in the identification and management of environmental and social impacts in a global and subSaharan context.

The creation of Principles and Guidelines for Social Impact Assessment (SIA) in the USA process has not been thorough during and after mining operations for communities (Diemel and Hilhorst, 2018 and Vella, 2018). This includes assessment practitioners taking on projects without considering how tasks have failed to encompass all the dimensions of a project and how it might affect local communities (Vanclay, 2020). This controversy in mining projects is a main contributor to a poorly implemented public participation. However, positive executions of the SIA are recorded, influenced by the international set of participation principles developed

in the 1992 Rio Declaration (Koy, 2019). However, this has not been the case for developing and some developed countries.

The second section discusses SIAs within sub-Saharan Africa. These cases deal with social impacts from mining companies, affecting communities' wellbeing, or not meeting its requirements in mitigating the social issues that they should address. Weak political will and weak environmental institutions are causing SIAs to be implemented ineffectively. This is exacerbated by a high degree of corruption, which leaves the African countries lagging on SDGs (Ibeh and Walmsley, 2021). For example, in Cameroon, eight forest dependent villages could not participate effectively regarding mining developments. The situation was compounded by the absence of EIA documents in the indigenous language (Alemagi *et al*., 2013; Leonard, 2017c).

In South Africa, the status of SIA remains largely neglected, and there exists considerable confusion surrounding its role. Debates persist regarding whether SIA should be integrated into the EIA process or should be left to function as a distinct and separate entity (Department of Environmental Affairs, 2010; Leonard, 2017a and Ochieng *et al*., 2010). The literature review investigates the ongoing scholarly discussions regarding the function of SIAs in developmental projects, specifically focusing on post-mining communities. This encompasses discussions surrounding the introduction of SIAs as a concept, an analytical framework, and an assessment tool. The review also encompasses the evaluation of developmental projects and their role in fostering public participation in mining developments.

1.6 Methodological considerations

The data on which this dissertation was based was collected in the Carolina area in Mpumalanga. It involved the participation of different actors drawn from the mine, the community, government departments and different Non-Governmental Organisations (NGOs). The key research tool that was used for this study was a mixed method approach. This involved identifying relevant participants and sending them questionnaires and surveys which were then completed and analysed to generate information that this dissertation was based on. However, a detailed account of the step-by-step methodological processes has been comprehensively presented and discussed in chapter 3 of this dissertation. In Chapter 2, it is observed that governments strive to enhance public participation endeavours; nevertheless, these initiatives do not appear to enhance the well-being of communities. Qualitative data collection tools were selected to address this issue. A relativist approach was adopted, and it was useful for

understanding how people experience mining impacts and public participation in the context of SIAs.

The Carolina Quaternary study site has a history of controversy affecting the socio-economic and environmental condition for the community. Public participation in the EIA is used as a tool to mitigate the environmental impacts. To find out if public participation is an effective tool in mitigating the environmental issues and satisfying the community, the researcher investigated using primary data. Key informants were selected using purposive sampling in accordance with their experience on mining, AMD, water quality and participation processes. Community activists and community leaders were among the key informants.

1.7 Ethical considerations

Research ethics becomes an important component in many research processes. Research ethics are guidelines for the responsible conduct of research. The research ethics process educates researchers conducting research, to ensure high ethical standards. Furthermore, research involves the cooperation and coordination among various people throughout different disciplines and institutions (Israel and Hay, 2006). This reinforces ethical standards enhancing collaborative work, such as trust, fairness, and accountability. This research was only commenced after clearance had been obtained from the University of Witwatersrand to ensure that all the ethical issues embedded in this study were addressed and captured.

In compliance with the policy of the University, research was conducted with human participants being a part of the data collection process. Within the ethical process carried out, anonymity and confidentiality were a priority, if the participant wished for that. Therefore, consent from a participant to carry out the research was sought, and participants were briefed regarding what the study entailed and would indicate if they wished to carry on with the interview or questionnaire process (see Appendix 3 for questionnaire guide). The identity of the participants was always kept anonymous during the interview process. Participants gave verbal consent for the researcher to include them in images. Within the report, the participants were categorised with pseudo names such as Interviewee 1, Participant 2 and Regulator 1. To maintain confidentiality, recorders and laptops had passwords so that information could not be easily accessed. Scholar and journal articles on public participation, SIAs, municipal reports and documents were all referenced appropriately (see Appendix 1).

‘Ethics' focuses on the disciplines that study standards of conduct, such as philosophy, theology, law, psychology, or sociology. There are several reasons why it is important to adhere to ethical

norms in research. First, norms promote the aims of research, such as knowledge, truth, and avoidance of error (Resnik, 2015). Second, since research often involves a great deal of cooperation and coordination among many different people in different disciplines and institutions, ethical standards promote the values that are essential to collaborative work, such as trust, accountability, mutual respect and fairness (Resnik, 2015). In the case of the Carolina town community participants, when interviewed, their consent had to be of priority, and a disclosure that their anonymity, if desired by them is granted. They may also request a copy of the thesis if desired, and the process of the interview will be discussed as a transparent process. The participants' identity will be protected during individual interviews, community forums, and focus group. To preserve the anonymity of participants, pseudonyms and designations such as Interviewee 1, Participant 2, Regulator 1, or generic titles was employed.

The research involves people, hence the need to obtain an ethics form as it forms an important part of the research study. This form ensures that the feelings, welfare, and rights of participants are protected (Williams *et al*., 2017). For a study that involves interviews and online questionnaires, it is important for the researcher to get informed consent from the research participants, ensure confidentiality and anonymity, and allow the research participants the right to withdraw from the study at any given time.

1.8 Scope of study

This study was geographically limited to Carolina in Mpumalanga Province, being The Quaternary catchment area X11B. This area has concentrated coal mining activities in Ward 21, in the Chief Albert Luthuli Local Municipality (CALLM). As a result, stakeholders in the area hold a firm understanding about the effects of mining operations. The research was motivated by many coal mining activities in Mpumalanga, with media and online research recording that communities are being affected socially and environmentally by coal mining activities. The geographical limitation of this study is primarily attributed to Carolina's status as a mining settlement, surrounded by a substantial number of communities. Consequently, the decision to focus exclusively on Carolina is essential, as it allows for the generation of comprehensive and effective information regarding the relationships pertaining to the issues under investigation. Secondly, the study was only interested in public participation. Enhancing public participation involves fostering leadership capacity among affected and involved stakeholders, empowering them for more independent decision-making. Additionally, it aims to encourage and actively involve local government in the participatory processes (Cooke *et al.*, 2003; Diemel and Hilhorst, 2018). The study involved the participation of only

communities that are near or adjacent to Carolina. Participation here was limited to the context of SIAs.

This study's primary focus was on the community of Carolina town, primarily because community members in this area have been significantly affected by the consequences of mining developments, notably Acid Mine Drainage (AMD). The study also involved other participants, such as mining officials and IAPs, who are exclusively associated with Carolina town and its specific developments. Consequently, the study did not consider any irrelevant participants or towns. Building on Chidzungu's study from 2019, this research established clear boundaries to emphasize that its scope was exclusively dedicated to investigating the role of public participation within the context of SIAs. Although SIAs encompass various components such as scoping, screening, and budgeting, this study confined its focus solely to one facet of SIA, which is public participation, and examined how it contributes to the facilitation of a comprehensive SIA.

1.9 Structure of dissertation

This dissertation consists of 6 chapters. Chapter 1 covers research conceptualisation. In this chapter I present the focus of the study as well as the research question, and research aim and objectives that guided the research process. Chapter 2 presents the literature review. In this chapter existing literature was engaged with, and comprehensively analysed with the view of what has been done and what is missing so that a rationale for this study could be provided. Subsections in this chapter are titled “Conceptualizing the literature on SIAs and mining: A global perspective”, “Contextualising the literature on SIA and mining: a sub-Saharan African perspective”, “Contextualising SIA and mining: A South African perspective” and “Gaps in existing knowledge regarding public participation”. Chapter 3 presents the methodological approach, where a Qualitative approach was chosen for this study. Specifically, a relativist approach was adopted. Chapter 4 presents the empirical evidence and Chapter 5 covers the analysis and discussion of the study. Chapter 6 closes off the study with the conclusion.

CHAPTER TWO

THEORETICAL CONSIDERATION AND LITERATURE REVIEW

2.1 Introduction

The resource frontier is growing worldwide due to the need for economic growth, especially in developing countries (Vella, 2018; Mancini and Sala, 2018). As a result, all international financial institutions and Equator Principles banks now require SIA within their development acts (Sonter, 2018). Within this context, it is essential to analyse the current SIA practices, learn from past mistakes and strengthen the understanding of the processes going forward (Vanclay and Hanna, 2019; McCullough, 2017). This will be done by discussing SIA and Participation literature. This discussion will include three themes into which this literature review has been broken down. The first theme is, "Conceptualising the literature on SIAs and mining: A global perspective", followed by the second theme "Contextualising the literature on SIA and mining: a sub-Saharan African perspective". The last theme is "Contextualising
SIA and mining: A South African perspective". This section will deal with literature pertaining to SIAs within the South African context.

2.2 Conceptualizing the literature on SIAs and mining: A global perspective.

SIAs emerged during the 1970s, led by the US legislation in 1969. It encouraged the formulation of SIAs within the EIA (Van Heerden, 2016). Then in 2003, was the creation of Principles and Guidelines for SIA, providing policy guidance. These guidelines are about understanding local and regional settings; dealing with the key elements of the human environment; using appropriate methods and assumptions; providing quality information for decision making; ensuring that environmental justice issues are addressed and establishing mechanisms for evaluation/monitoring and mitigation (Burdge *et al.*, 2003). Furthermore, the creation of the US legislation encouraged reporting procedures to meet the ever-growing global needs of sustainable development (Vanclay, 2006). Therefore, policy structures such as the Global Reporting Initiative (GRI) and the equator principles and International Association for Impact Assessment (IAIA) came to be implemented within the SIA as reporting procedures (Iyer, 2016).

The policy structures within mining impact assessments' US legislation in 1969 encouraged that global mining initiatives meet the growing expectations of improved social performance

and sustainable development by extractive industries. This ensures that development maximises its benefits and minimises its costs in relation to the impact on post-mining communities as well as operationalization through social/cultural diversity and gender analysis and stakeholder analysis (Dowling, 2008; Leonard, 2017b; Iyer 2016 and Van Heerden, 2016). For instance, the EIA legislation has since been adopted all over the world, including in countries such as Australia, Canada, the Philippines, and South Africa. Furthermore, the IAIA represents its ideologies in more than 120 countries including Japan, New Zealand, Nigeria, Cameroon, Eastern Africa, Zambia, Mozambique, Ghana, Senegal, South Africa, Canada, and the United States (Dowling, 2008).

Social Impact Assessments are typically conducted at multiple stages of a development project to address negative impacts and enhance positive ones. This allows for the utilization of tools within the impact assessment process such as measures aimed at reducing gender inequality, to mitigate adverse health consequences. For instance, mining organizations and financial institutions have developed strategies to address gender inequality. An example of this is how international financial documents have placed significant emphasis on gender risk mitigation and project development for affected communities. Notable institutions in this regard include the World Bank and the International Finance Corporation (IFC) (Leuenberger, *et al.,* 2021). Currently, EIAs override social concerns such as overlooking the public participation impacts of mining (Esteves *et al*., 2012; Dendena and Corsi, 2015). This goes against the holistic approach that the EIA globally aims to achieve, which is minimizing and mitigating the effects on human heath regarding interaction with developments (Morrice and Colagiuri, 2013; Leonard, 2017b). This is validated according to the NEMA regulatory regime which confirmed that SIA is not within the EIA process, 15 years after commencement of EIA in many global countries. Exceptions to this are Queensland, Australia, where project developers are required to submit a Social Impact Management Plan (SIMP) as part of their environmental impact statement. Another exception is South Africa, where Social and Labour Plans (SLP) were introduced in 2004 specifically for mining projects (van der Watt and Marais, 2021). Lastly, another country that has the SIA within the EIA process is the Philippines where similar social management processes are in place for mining projects (Esteves *et al*., 2012 and Dendena and Corsi, 2015).

A critical issue concerning the SIA within the EIA process is the significant absence of effective public participation. Numerous instances underscore environmental challenges stemming from the deficiency of public involvement (Makmor *et al*., 2020). One noteworthy example is the

Baram Dam project in Tanzania, where a clear lack of public participation was evident. According to the local community, they felt compelled to support the dam's construction and planning, even though they had reservations about it (Leuenberger *et al*., 2021). Another case pertains to gold mining in Raub, Pahang, where numerous protests arose against the mining operations. This was primarily due to the approval of an EIA without prior public participation, despite the community facing health issues linked to the mining activities. After four years of operation and escalating health-related concerns, the federal court urged the mining company to conduct a comprehensive EIA. In response to the recognized health-related damages, the gold mine ultimately opted to cease its operations.

Positive executions of an SIA have been recorded. For instance, Gibson (2000) cites a case within a Canadian mining area where tools within a SIA, such as participation, exceeded the anticipated minimum standards. Freudenburg (1986) discusses a case, where a development in the Northern Cheyenne Tribe in 1985 had an EIA unapproved due to its failure to consider potential social impacts on developed communities and residents in Canada.

Another example of an SIA success within a developed country is in Australia, Queensland's Bowen Basin coal industry. At a bauxite mine named Alcoa, operators consistently engaged in community consultations throughout the entire duration of the project, surpassing the standard legislative requirements for EIA regarding community engagement (Lockie et al., 2008). Local communities in the vicinity of the mining concession in Western Australia chose to pursue the reforestation of indigenous Jarrah forests rather than opting for recreational areas like lakes and grassed picnic sites (Burton *et al*., 2012). In these cases, stakeholders included all the necessary individuals who could be affected, provided them the platform for a voice and abided by the regulations of participation (Vella, 2018).

Considering the importance of public participation, and the areas of confusion associated with it, a regulated international set of participation principles was developed in the 1992 Rio declaration (Koy, 2019). The declaration focused on including the local and affected stakeholders in the decision-making processes and to make the collection of social influencers more cohesive for a holistically agreeable result to avoid undesired or unnecessary impacts from a development such as a mine (Guerra and Parola, 2019 and Hügel, and Davies, 2020). Thus, communities worldwide have gained some advantages from mining activities. One successful case where access to rights in the Rio declaration guidelines are implemented correctly is in Northparkes Mines, central west New South Wales (NSW). The standard for SIA in NSW showed emerging industry guidelines on social responsibility, utilisation of

community engagement strategies and a localised workforce, providing information to necessary stakeholders (Michell and McManus, 2013). An integrated management team and community engagement practices such as efficient public participation, and a legal forum where participants could be protected, were provided. (Michell and McManus, 2013).

In the Philippines, Cooper and Elliott's (2000) analysis of case studies serves as a notable example of public participation, as it necessitates the demonstration of social acceptability within the impact assessment process. This helps with allowing transparency. Another example of this is in the United Kingdom, where participatory methods such as public exhibitions, notices within regional newspapers and public meetings occur (Petts, 2003). Another aspect of the public participation process is how early it is done within the development stages. In the Netherlands, the SIA and EIA process is accessible from the initial stages through to the post-decision-making phase (Leonard, 2017c).

In view of the above, satisfactory SIA and participation practices within developed countries have occurred. In Australia, for instance, public participation within greenfield mines in Queensland Australia, identified negative aspects of the mining companies' and Queensland Government's public participation activities (Meissner, 2020). Stakeholders experienced inadequate notice periods and too few opportunities to attend public participation events; inopportune timing of public participation activities, giving stakeholders a limited window to discuss concerns with the mining company (Meissner, 2020). These examples further defy the universal aim of giving adequate notice to the public regarding comment opportunities.

Another controversial case involved the construction of the Bakun dam development in northwestern Tanzania. This development conducted an EIA only after the construction of the dam. The EIA was slammed for being flawed, as there was lack of integrated public participation. The confidentiality of the EIA report violated international laws of transparency which advocates for public viewing and public participation in facilitating a comprehensive EIA report. Nevertheless, the construction of the dam was completed in 2011, and is seen by the public as an example of degraded principles of free, prior and informed consent (Leuenberger, *et al.,* 2021). Yet another case is in Guatemala, where private consultant firms carried out the EIAs.

Conflict resolution firms establish contact with the communities before the development of EIAs and extend opinions may affect biased participatory procedures by the given community (Aguilar-Støen and Hirsch, 2017). Consultants often offer jobs, projects or money to community leaders in exchange for their efforts to convince people in the communities to

support a given project (Aguilar-Støen and Hirsch, 2017). The EIA reports in Guatemala show that people are asked biased questions such as, whether community residents wish to have development in their communities. Promised developments or incentives may include schools, jobs, health centres and electricity (AguilarStøen and Hirsch, 2017). These predetermined questions create predetermined answers. A further example of the shortcomings of public participation within the SIA is highlighted within Indonesia. A study of 18 proposed projects demonstrates that local stakeholders' objections were not heard, prompting them to reject the project proposals and compromising the integrity of the SIA. (Değirmenci and Evcimen, 2013).

Globally, sustainable development requires the participation of the communities who are benefitting from developments. The challenge with the mining sector in Africa and other developing countries is lack of connection between the outlooks of the corporations and community needs (Mdamba, 2021; Maconachie and Hilson 2013).

To facilitate good practice worldwide and to mitigate the clear confusion associated with public participation, international agreements and policy initiatives were created. These include agreements such as the Rio Declaration and Aarhus Convention. These agreements emphasis the need for and importance of involving the public in environmental decision-making, which is fundamental in ensuring the rights of the public (Mnengwane, 2014 and Vella, 2018). Principle 10 of the Rio Declaration on Environment and Development signed at the United Nations Earth Summit in 1992 highlighted three fundamental principles that shaped the participation policy. These were access to information, access to participation and access to justice (Mnengwane, 2014). These principles emerged from the United Nations conference on environment and development (Dara *et al*., 2017). The Aarhus Convention anchored around three pillars that evolved from the Rio Declaration. These pillars are access to information around the environment, public participation in environmental decision-making processes and access to courts of law or tribunals in environmental matters. The Aarhus Convention and Rio Declaration regarding public participation sum up similar themes which are early participation, access to documentation relevant to the decision-making process, interactive engagement of the relevant public is all important (Vella, 2018; Mnengwane, 2014). The Ministerial Council on Mineral and Petroleum Resources in Australia by 2004 explains the significance of inclusiveness, transparency, and open communication (Lockie *et al*., 2008; Chidzungu, 2019). Currently, there are cases in Africa where the Rio declaration and Aarhus Convention principles have not been followed through. This results in weak governance practices such as poor

attention and monitoring from private investors and traditional leaders who can capture land ownership and mining community trusts for their own benefit (Leonard, 2018). For example, in the Democratic Republic of Congo (DRC) the mining policy reforms during the last decade have been ambiguous. There is a lack of transparency and limited participation from valid stakeholders that are vulnerable to mining developments (Diemel and Hilhorst, 2018).

Globally, EIAs overlook ways to improve participatory processes, unfortunately companies and consultants in developing countries often abuse the process to approve developments (Chidzungu, 2019). Within the SIA are principles that should facilitate a comprehensive impact assessment, however some of the principles are criticised. An example is the lack of Free Prior Informed Consent (FPIC) implementation, within the SIA. There may be areas of concern by scholars within the foundational structures of the SIA if FPIC is not a main facet. Since participatory processes are essential for a comprehensive impact assessment, FPIC is a vital tool within the makeup of an SIA. The concurring issue globally is that social issues are not treated with urgency. The inter-organizational committee on principles and guidelines for SIA, the IFC and Equator Principal banks take the lead role in setting good industry practice standards. Their emphasis is on management plans and systems (Iyer, 2016; Doyle *et al*., 2019 and Burdge *et al.*, 2003). Regarding the inter-organizational committee on principles and guidelines for SIA, the set principles and guidelines within developed countries such as China and, most of all, within developing countries, have not reached the influential aim of achieving desired outcomes of the values of NEPA.

Public participation practices in developing countries often fail to accommodate local concerns, or fail to enable meaningful participation (Lodhia, 2018 and International Association for Impact Assessment, 2020). The Rio Declaration access to rights component is therefore not prevalent in developing countries in which communities cannot access the rights to empower themselves. As a result, some scholars criticise public participation within SIAs (Vella, 2018; De Lange, 2013). The institutionalisation of SIA strategies relies on political will and public participation systems, regulated in relation to internationally accepted good practice (Vella, 2018). This is motivated by many stakeholders associated with mines who feel that the SIA studies conducted do not really look for solutions and have limited benefits, because decisions will already have been taken and contracts signed. Impact Assessments will only be there to fulfil legal obligations by the proponents (Sonter, 2018; Vella, 2018 and Vanclay, 2002).

Public engagement in SIAs carried out in Malaysia has been restricted by deficiencies in environmental regulations, along with a general lack of awareness and expertise among the

public. This is caused by capacity building not being prioritised by the local government (Leonard, 2018). A comparative review between Malaysia and what was then the European Union (EU) shows that there can still be areas of confusion where public participation is implemented. For instance, Malaysia only starts involving the public in its EIA procedure in the decision-making process, which is the later stage of the EIA, whereas in EU and its member states, the involvement of the public starts at the earliest stage, which is the screening process (Mokhtar, 2016). This proves the participatory process is all depending on what the relevant authority in the country suggests (Mokhtar, 2016). Furthermore, part of contributing to the problem relating to the public participation of the public in SIA in Malaysia is how the public was not provided with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions. This is because the consultants and developers did not follow or understand the participatory systems within the EIA sufficiently (Marzuki, 2009). In another case, the Jiangsu Province of China, impediments to effective public participation were evaluated in thirteen cities (Liu *et al.*, 2017; Leonard, 2017a). The study revealed that public involvement was generally insufficient, primarily because information was not readily available to the public and accessing the complete EIA report posed challenges. The relation standards for facilitating public participation for that area were not easily understood (Leonard, 2017a).

2.3 Contextualising the literature on SIA and mining: a sub-Saharan African perspective.

Environmental impacts regarding land use and territorial aspects mostly concern African countries (Leonard, 2017b and Kruger, and Sandham, 2018). To manage compromised social standards in the assessment process, SIAs are used to minimise the social effects that mining can have (Leonard, 2017b and Kruger, and Sandham, 2018). However, within developing countries, SIA instruments such as participation, are inefficient, thus compromising the SIA. Within the last decade in Africa, the SIA process has lacked effectiveness and efficiency during and after mining operations near communities (Diemel and Hilhorst, 2018 and Vella, 2018). As a result, practitioners have taken on projects that are too risky or work on tasks without taking into consideration all the dimensions in which the development could be impactful positively and negatively (Vanclay, 2020). Such cases within Africa, deal with social impacts from mining companies that have a detrimental effect on communities' wellbeing, who are not meeting their legislative requirements in alleviating the social issues that they should address.

Research extraction projects such as gold mines have the potential to create transformative sustainable development. They can achieve this by abiding to the health targets of the sustainable development goals. This may involve both positive and negative implications for communities involved (Leuenberger., *et al* 2021). Positive impacts may involve increased local socio-economic status for communities, with upgraded infrastructure and improved health and hygiene. Alternatively, mining developments can exacerbate issues such as environmental degradation, poverty, and inequality, all leading to negative health outcomes (Leuenberger, *et al* 2021).

An example is an industrial goldmine in Tanzania which had open discussions with participants on environmental issues. Feedback regarding this topic was negative, consisting of degradation caused by the mines. For example, a social issue was raised, where blasting from the mines caused cracks in the houses of community residents (Leuenberger, *et al* 2021). The effects of mining in African communities are evident. In the case of the gold mine in Tanzania, land and soil degradation is prolific. A decrease in agriculture occurred as a result (Leuenberger, *et al* 2021). Chemicals from the mines polluted crops and caused rashes on people's skin. In the category of soil and land, deforestation occurred, which affected women, as they had to walk long distances to collect firewood (Leuenberger, *et al.,* 2021). Several participants interviewed expressed that one environmental degradation theme was air pollution. This was as a result of dust from mining operations and passing mine's trucks. The health effects were respiratory diseases, particularly affecting children whose immune systems were still weak. This would in turn affect women more since they will be expected to take care of the sick children (Leuenberger, *et al* 2021).

Participants within African mines reported gender-based discrimination, with men being given priority when it came to mining jobs and employment (Leuenberger, *et al.,* 2021). Participants also reported limited opportunities for local community members, as they were not qualified for technical mining tasks and jobs. Therefore, most of the jobs offered were for unskilled labour, with low salaries and health risks (Leuenberger, *et al* 2021). Furthermore, in Africa, mining projects' SIA identifies potential negative impacts on women. Broader insights into how SIAs can be strengthened need to be addressed (Hill *et al.*, 2021). The issue is that SIA approaches view the community as a unit, without taking into consideration the different roles, positions and situations of women and men (Hill *et al.*, 2021; Leuenberger, *et al.,* 2021).

Another example where gender issues arose is in Uganda. The EIA Regulation requires mining developers to pay attention to social considerations, including effects on employment, social

cohesion, human health, immigration, communication, local economy and culture and objects of cultural value (Hill *et al.*, 2021). The impact assessment process for the East African Crude Oil Pipeline (EACOP) project was assessed and asked the extent to which gender analysis was integrated. This helped businesses, support gender equality and women's rights, fundamental to achieving the 2030 Agenda for Sustainable Development and respecting human rights. This case in Uganda focuses on rural women whose livelihoods are land-based. It is predicted that 1,800 jobs will be created, 720 are which is for foreigners. While the SIA does not state how many of the total jobs created by the project are likely to be filled by men and how many by women, there is an implicit acknowledgement in the SIA that most jobs will be filled by men (Hill *et al.,* 2021).

Within Africa, there are many cases where weak political will and weak environmental institutions are causing EIAs to be implemented ineffectively. This is exacerbated by a high degree of corruption that leaves the African countries lagging on SDGs. EIAs are also ineffective in the assessment process due to incoherent and weak environmental laws with limited environmental monitoring and weak sustainability policies. This causes the levels of EIAs and governance to vary widely within Africa, as most countries, even those with some form of EIA legislation, are slow to implement EIAs effectively (Ibeh and Walmsley, 2021).

The African framework for the mining sector resulted in creating more favourable environments for foreign investment. As a result, legislation within the mining frameworks has caused the reduction in institutional capacity, thereby bringing down the standards of EIAs (Chuhan-Pole *et al*., 2017; Leonard, 2017a). This reduction of the EIA standard has exacerbated the "resource curse". This means that countries rich in natural resources tend to grow more slowly than resource-poor or developed countries. This phenomenon is common in the African developmental context and is mainly caused due to influential actions from global industrial mining companies (Mancini and Sala, 2018).

Due to the reduction of the EIA standard in sub-Saharan Africa, attention to assessment practices in the mining community management processes is lacking. Goldman and Baum (2000) posit that SIAs do not focus on the implications of large-scale development projects on social elements (Chidzungu, 2019). Due to budgetary and political constraints, SIAs in Africa do not follow through the full project cycle, and stakeholder participation is kept to the legally required minimum (Vella, 2018). For example, in Cameroon, for concession-based forestry, eight forest dependent villages encountered lack of promotion of public participation by

government and unavailability of EIA documents in the local language, worsened by the high illiteracy rate within the country (Alemagi *et al*., 2013; Leonard, 2017a). These negligent actions may have long-lasting detrimental effects for the local communities. Local governance is destabilized from not following the correct assessment procedures, thus allowing any organisation to enter areas without local stakeholder's permission. An example is the infiltration of military groups of the resource trade, which results in communities near the mines having to be displaced or enduring forced labour (Diemel and Hilhorst, 2018; Leonard, 2017a).

This influences the sub-Saharan African developments and international SIA trends. Participatory principles from the Inter-Organizational Committee on Principles and Guidelines for Social Impact Assessment and Rio Declaration become difficult to implement within the complex context of the countries. Complexity with EIAs is bias and stigmatism in the assessment process from mining companies, along with poor local economic environments and conflict areas (Leonard, 2017b). This creates for preference of development over the needs of vulnerable communities. Macro scale mining investments tend to disregard indigenous knowledge (Munnik, *et al*., 2010).

Considering the scholarly literature reviewed on SIAs, it becomes evident that the most substantial consequences of mining activities are closely linked to demographic factors. These impacts have direct implications for socio-economic aspects, encompassing areas such as population, migration, erosion of traditional authority structures and the emergence of gender imbalances (Mancini and Sala, 2018; Hilson, 2002). An example of such are communities and traditional structures which are burdened by unbalanced social economic environments, where equality and accessibility to resources and information become compromised. Munnik *et al*. (2010) asserts this by pointing out that both agricultural and mining activities in the vicinity of rural communities are perceived as unwelcome neighbours.

The concerning socio-economic challenge in the above case may be food insecurity for mining communities. This is because farming and arable land may be prohibited from community use. In African countries such as Ghana and Senegal there is general failure of policymakers as well as researchers to engage with the Artisanal Gold Miners (ASGM). Communities lack state support measures for regulating ASGM (Mkodzongi, and Spiegel, 2019). Furthermore, international mining activities may encourage the community to move to another location. This may cause bitterness and hostility amongst the host community. For instance, resettled communities lose the subsistence resources they were used to having before. The new location may not offer all the water, vegetation, farmland, sanitation, or game that were available to

them (Conde, 2017). An example are sixty participants in Kanga and Madina Villages in Bonthe District, Sierra Leone who were displaced due to mining activities (Wilson, 2019). This contributed to social impoverishment instead of uplifting the socioeconomic condition of resettled communities. This impoverishment included loss of land-based resources with an adverse impact on employment and the local livelihoods (Wilson, 2019).

There is absence of community participation in developmental design plans, leading to the marginalization of local people's views and interests. thus, disadvantaged relocated communities (Wilson, 2019). It is evident therefore that African countries, in the pursuit of development agendas for national economic growth, are willing to overlook local and regional social developmental consequences (Leonard, 2017c; Vella, 2018). Furthermore, women's safety is compromised. This is because of the in-migration of large numbers of men seeking mining employment and other opportunities. (Hill *et al*, 2021).

Lack of management and participatory administration within planning policies occurring during and after mining operations for communities over the last 10 years was a prominent feature in the mining and community management process within many African nations (Diemel and Hilhorst, 2018). The pressure on mining organisations to proceed with development, coupled with governments benefiting from the generated revenues, results in the state's reluctance to educate and train communities about resource development and involve them in the process.

Lockie et al. (2008) express concerns about the state's failure to educate community members about the participatory process and to ensure transparency in the impact assessment process. They highlight the example where communities may overlook positive changes and downplay adverse impacts when not well-informed. This limitation hampers their ability to influence decision-making. As a result, most local communities surrounding the mining activities remain undeveloped from lack of reporting that should come from participatory processes (Knutsen *et al.*, 2017; Campbell, 2009 and Chuhan-Pole *et al.*, 2017). Public participation is a tool that holds a gap between theory and practice, particularly in sub-Saharan Africa. (Leuenberger, *et al* 2021). This reduces institutional capacity in mineral rich African countries which in turn brings down the standard of areas of importance for economic and social development within the mining rural communities (Chuhan-Pole *et al.*, 2017; Leonard, 2018; Besada and Martin, 2015).

In Rwanda, the national environmental challenges are increased by lack of environmental awareness, unqualified technical human resources and limited intra-sectoral coordination of the social and environmental concerns. Before 2003 the EIA was not an obligation in development projects, as was the case with most other African countries (Harelimana *et al*., 2020). In 2005 the EIA attained legal status and was used or applied in developmental projects. In Rwanda, the different companies were found to have unsatisfactory EIA requirements. This was the case with brewing, textile, and cement companies. These companies did not incorporate any form of social environmental management plan and all their EIA and SIA compliance performance standards were found to be unsatisfactory, below 40% (Harelimana *et al*., 2020). Hence, literature criticises the impact assessment process in mining and business development operations in Africa, portraying them as tokenistic tools used merely to approve developments rather than genuinely engaging with the concerns of interested and affected groups. However, there is still limited literature and research on the topics of SIAs within Africa (Leonard, 2017c). This confusion is exacerbated by lack of transparency from mining developments and consultants in Africa. They do not show the mining EIA reports to the public or IAPs (Leonard, 2017c and Leonard, 2018).

2.4 Contextualising SIA and mining: A South African perspective

The commodity frontier in mining has expanded to the global south, including South Africa, making it a suitable place to do business in the resource sector. This is due to a perceived positive governance and economy, thus avoiding complications that may occur in less stable conflicted African countries (Conde, 2017 and Leonard, 2017a). In the case of South Africa, due to lack of corrective policy implementation monitoring health and lifestyle conditions for communities during the pre-Apartheid era, NEMA was formed to rectify past social issues in the era of mandatory EIA in 1998 (Kruger, and Sandham, 2018). However, there is still a neglected status of the SIA within South Africa, with areas of confusion associated with SIA within the EIA (Leonard, 2017a and Ochieng *et al*., 2010).

SIAs are overlooked in the South African impact assessment framework. They tend to be referred to as an “orphan” of an assessment process. This is because they are not fully adopted by the decision-making process (Van Heerden, 2016). This is evident within NEMA 1998, where there are still no set fixed guidelines to describe exactly what is expected from an SIA, and how the process of the SIA works. This makes evaluating social activities confusing (Hildebrandt and Sandham, 2014). Therefore, elements within the SIA like public participation,

are of little effect and value. This may lead to negative physical and social environmental impacts for communities, and may pave the way for corrupt activities (Leonard, 2017b)

Impacts of mining on the environment are evident, with such effects as poor air and water quality (Montmasson-Clair, 2015; Vella, 2018 and Leonard, 2017c). An example is AMD from coal mining in Mpumalanga. It affects infrastructure, livelihoods and compromises health and wellbeing (Leonard and Langton, 2016; Munnik *et al*., 2010). Furthermore, there are reports that 104 coal mines were operating without water use licences. There is also a case of a senior politician in Mpumalanga who overrode a decision to halt illegal mining activities. The Weekly Mail & Guardian reported that several prominent politicians, their relatives and associates are involved in coal mining (Munnik *et al*., 2010). The DMR and consultants employed by mining companies decline to furnish IAPs with details regarding the proposed provisions for rehabilitation, along with financial and technical information (Munnik *et al*., 2010).

In South Africa developmental issues such as lack of corrective policy implementation monitoring health and lifestyle conditions for communities during the post-apartheid era occur. This shows that a developing African country is not following international procedures. This is evidence that there are areas in the IFC, Principles and Guidelines for Social Impact Assessment (SIA) and NEMA where development issues remain a confusing topic in a South African context (de Wet, 2019). These developmental issues are still prevalent within South African communities, even after the amended acts within NEMA. Therefore, there are still areas in the SIA process that are of concern where NGOs and communities complain about the poor living standards caused by mining activities (Leonard, 2018 and Leonard, 2017b).

To gain further knowledge on the SIA process, perspectives of the practitioners on the status and practice of SIA were investigated by Hildebrandt and Sandham (2014) regarding the quality of a sample of SIA Reports (SIAR) in SA. This included two surveys of 11 SIA practitioners in 2012 and thirteen practitioners dealing with NEMA 2006 in 2016 and NEMA 2014 regulations (Kruger and Sandham, 2018). The two-part survey in 2012 and 2016, explores four themes which are: SIA in practice, Problems in SIA, Effectiveness of SIA and the future of SIA. The theme ‘Problems in SIA’ deals with public participation processes and confusion amongst the public, leading to the weakening of both SIA and public participation. Regarding the effectiveness of SIA, findings showed that practitioners agree that SIA is still essential within Environmental Assessment (Kruger and Sandham, 2018). Further evidence from literature shows that many practitioners agreed that public participation and SIA are different but interdependent processes. They therefore agreed this is (perceived as) a problem, because the

information from the public participation process is often used by project proponents to produce a SIAR for clients who have limited experience and knowledge of SIA (Lockie *et al*., 2008).

However, indicating a more pessimistic view, findings amongst all themes explored showed a large gap between the theoretical knowledge and practical application of SIA. Findings indicate how practitioners were not even aware of the changed requirements, while others indicated that the requirements are not defined enough, which could lead to incompetence in the field (Leonard, 2017c; Kruger and Sandham, 2018). The practitioners responded that the existing SIA frameworks are a 'rubber-stamping' exercise which lets the actual assessment take 'a back seat'. The uniqueness of each social environment is not taken into consideration (Kruger and Sandham, 2018).

Regarding the SIA 'practice' theme, practitioners noted that they have a short time to do the assessments, with speculation that the municipal departments are prematurely validating the licences, showing a disconnection between the law and implementation. Here, the sustainable development aim is compromised. This is because of the complicated legislative amendments and weak capacity and knowledge of authoritative municipalities caused by a shortage of skilled individuals to review SIA reports, as well as limited publications on SIA. Practitioners agreed that mining companies are complying with the EIA principles but neglecting the SIA practices such as transparent decision making on key management issues with communities or NGO (Martinez and Komendantova, 2020). This confusion is validated by practitioners expressing that the integration of SIAs and EIAs is not problematic, but there is confusion around SIAs and public participation if the two processes are integrated (Hildebrandt and Sandham, 2014).

The quality and status of SIA reports were explored by Hildebrandt and Sandham (2014), and findings confirmed the world-wide trend of SIA neglect in EIA, caused mainly by a lack of trained and skilled SIA specialists, and a lack of flexible methodological guidance, affecting the efficiency of SIA in practice. One of the main problems that emerged from research literature, and many practitioners' perspectives, was that public participation is often confused with SIA (Martinez and Komendantova, 2020). This confusion, from the practitioner's perspective, causes problems in the EIA process, because the information from the public participation process may be used to produce an SIA report.

Even after 25 years of post-apartheid governance, South Africa continues its efforts to enhance strategies that ensure comprehensive public participation in decision-making within certain

sectors of the economy. Such a case stems from the strikes at Marikana in 2012. Lonmin Platinum Mine Company employees were caught up in wage disputes and how the mining operations were causing social tension (Soyapi, 2017). Therefore, the NEMA were questioned. Another case, stated by Peter St Clair, chairperson of the Dullstroom Ratepayers Association in Mpumalanga, was that the significance of the SIA process lies in offering everyone the chance to provide input. However, in many cases, mining companies and consultants tend to misuse this process by inadequately consulting stakeholders and neglecting proper notifications required for approval (Leonard, 2017). This is further validated by Du Pisani and Sandham (2006) who suggest that, within South Africa's mining operations, there is an increasing need to prioritize the consideration of social impacts. This is imperative since these impacts play a pivotal role in empowering marginalized communities and bolstering democratic processes.

In the current governance framework, the government has enacted various laws, including the Mineral and Petroleum Resources Development Act (MPRDA, Act No 28 of 2002), and the NEMA Act 107 of 1998. In addition to these legislations, the Social and Labour Plans (SLPs) system was introduced to address socio-economic challenges linked with mining activities, aiming to enhance public participation and align with the South African constitution and local government policies (Mdamba, 2021). Incorporated into the SIA, the SLP system was implemented in 2010 to address the lack of community participation in decision-making processes, as mandated by Regulation 46 of the MPRDA 28 of 2002. An SLP is a prerequisite for the government to grant a mining rights license (Masemola, 2017). The establishment of the SLP system aimed to ensure meaningful benefits for communities from mining companies operating in their area (Centre for Applied Legal Studies, 2018). However, the system still exhibits weaknesses, particularly concerning holding mining companies accountable (Mdamba, 2021).

South Africa began the revision of its environmental regulations. This exercise included the increase of citizen participation within the SIA process, emphasising how the importance of sustainable development improves participatory mechanisms and identifying potential development impacts (Murombo 2008; Leonard, 2017c). These however have not been followed effectively by mining companies and consultants (Leonard, 2017c). Attempts have been made to improve the community participation focusing on social rights and equity through the creation of the White Paper for social development and improving the participatory processes through a department of corporate governance turnaround strategy in 2009 with a 5-year plan. This however seems not to have worked out (Leonard, 2017b).

Some scholars criticize the IFC performance standard 7, which is a major player in structural development, for not focusing on ways to improve SIA and participation practices. Criticism is around not supporting FPIC principles within the SIA (Doyle *et al*., 2019). FPIC is an international best practice in the United Nations Declaration on the Rights of Indigenous Peoples. It allows self-governance regarding resource activities. Within these standards, the primary objectives of SIA in mining are to: (1) understand how a proposed mine will change the life of residents, communities and regions; and (2) provide a framework for collaboration with stakeholders and the integration of inputs from affected stakeholders into the planning, design and management of the mine's impacts, both positive and negative, on society (Lodhia, 2018 and George *et al*., 2019). FPIC empowers communities to have a significant say in how development could impact their lives. It involves systematically informing and engaging communities about the potential or actual effects of development projects on their well-being. It appears that IFC and local legislations are against communities having the last say. As a result, public participation has not always been received positively.

Considering the above, higher powers capitalise on advantages such as Anglo Platinum, who filed a suit against environmental activists and lawyers who scientifically validated that their operations were detrimental. In another example, a petrol fuel station developer sued the head of Libradene Wetland Association due to their destruction on the environment (Meeuwis *et al*., 2014). In these cases, community members and protecting representatives had voiced their concerns through the participatory procedures, and it was evident that the communities did not give consent for the proposed projects. The critics of the EIA and SIA processes in South Africa further argued that participatory processes have menial discussions following insignificant results when trying to establish a common ground among stakeholders with conflicting values and interests (National Research Council, 2008). Government authorities bear responsibility, and prospects for improvement in high level decision-making remain limited. This is evident in Mpumalanga, where the DMR displayed bias in the public participatory process with civil society (Leonard, 2017b).

In Mpumalanga, most government authorities do not have the capacity to confirm the contents of Environmental and Social Impact Assessments (ESIAs) (Leonard, 2018). This situation occurs after project approval, characterised by brief public notice periods and insufficient consultation, along with the concealment of EIA information and the fabrication of details regarding public participation (Leonard, 2017b). Kirkpatrick (2002) echoes this sentiment,

suggesting that public participation often becomes a bureaucratic exercise resembling a "green wash." .

Leonard (2017b) observed that, Dullstroom landowners, farmers and local youth organisations stated EIAs' rather than creating a participatory platform for input into development processes was used to exclude IAPs and get developments approved. Five informants highlighted that environmental consultants and mining companies perceive regulatory weaknesses to inadequately consult with IAP (Leonard, 2017c). Informants conveyed that, rather than the government enforcing EIA processes, attempts were made to weaken EIA regulations and restrict public participation (Leonard, 2017). IAPs are underrepresented, and the response to invitations for participants to voice opinions is limited (Leonard, 2017c). Another instance is observed in Mpumalanga, where various civil society groups, in a letter to the Acting Chairperson of the Portfolio Committee on Mineral Resources dated 6 September 2013, pointed out the lack of participation and notification for community members regarding mining development decisions by mining companies and the DMR at the national level (Leonard, 2017b). In cases where civil society had complained, the EIA reports were not in the language understood by local communities. This is still not addressed in the updated 2014 EIA regulations (Leonard, 2017b).

Furthermore, in Mpumalanga, there is poor governance over mining applications (as witnessed in Dullstroom). Local government is under-resourced and lacks strategic employment of government officials to get mining development approved (Leonard, 2017a; Leonard, 2018). An example of regional government negligence is the Department of Environmental and Water affairs in South Africa, which is an integral authority within the municipality in regulating Mpumalanga's priorities. From this department there have been complaints about local and district municipalities not being capable of making a difference regarding the effective incorporation of participation within SIAs (Leonard, 2017a).

This poorly managed participation in SIA and EIAs can lead to failure in achieving intended outcomes, or intended consequences for affected communities (Vella, 2018). If local governance within the municipality does not monitor processes like participation within an SIA, then participation is likely not to deliver its objectives (Leonard, 2017c).

The Emalahleni municipality in Mpumalanga is legally obligated to facilitate public participation in all wards of Mpumalanga (Mdamba, 2021). Public participation plays a crucial role in municipal planning as it is integral for policy change. The Emalahleni Local

Municipality incorporates a Public Participation Unit to ensure thorough consultations with communities on government programs. However, the Integrated Development Plan (IDP) of the municipality lacks evidence indicating that public participation is conducted with companies that allocate budgets for community needs, such as bursaries and skills development (Emalahleni Local Municipality, 2018; Mdamba, 2021). It can therefore be argued that policies within the SIA procedures were not followed and not implemented, according to the Chairperson in Dullstroom Rates Payers Association highlighting that policies within the SIA process were not followed out correctly and may not have been taken seriously enough.

Regarding the town of Carolina, government capacity has not monitored social impacts of mining effectively. As an example, funds intended to mitigate the socio-economic impacts imposed by AMD are instead redirected to other purposes. This sheds light on the corruption issues within the area. Communities are having to fight for infrastructural wellbeing and health (Chidzungu, 2019). Public participation proceedings can rectify issues, such as shedding light on matters through protest with formal requirements and action needed from part of the municipality.

Within the town of Carolina in Mpumalanga, some community mining activists argued that the proceedings were not conducted correctly. Sending a memorandum was just viewed as a formality by the municipality to be passed off as public consultation (Chidzungu, 2019). This formality perception is emphasized by community mining activists from Carolina public participation. Chidzungu (2019) highlights the absence of effective public participation. The municipality approves and grants applications without community endorsement, making the process of sending the memorandum for public input a mere formality. Literature and practitioners' perspective in the public participation process generally describe confusion regarding the SIA process, especially in South Africa (Raga et al., 2011).

Chidzungu (2019) indicated that the public participation process was only done during project proposals to obtain a mining license. Only a limited number of the issues on hand are acknowledged, leading to the represented group being unaware of the community needs. Some participants, 79% in Carolina, confirmed the near non-existence of public participation during interviews (LED official 1, 22 January 2019; Chidzungu, 2019). In order for local communities to adequately address issues related to mineral development, they must be wellversed in the challenges posed by mining activities to navigate the existing problem space effectively (Chidzungu, 2019; Sumi and Thomsen, 2001). If the SIA process is not taken seriously enough in the EIA, public participation practices will not improve (Chidzungu, 2019). Critics further

argue that the public does not have sufficient technical knowledge to make an input into environmental assessment and decision making, and secondly, that the process seldom achieves the desired outcome (National Research Council, 2008).

2.5 Rational of study/ Gaps in existing knowledge regarding public participation

Internationally, SIA has had success with efficient social management plans and effective community participation. However, there is still limited literature to validate a high SIA success rate, and more often there are negative reviews and experiences, criticising the SIA process globally, especially within developing countries (Leonard, 2017c).

There is a lack of up-to-date literature, in a global context, on positive impacts of assessment practitioners and credible processes to use as a reference of good practice. This includes a lack of literature regarding the public participation process conducted within international environments. In the field there is limited practitioner expertise. For example, in Malaysia information to the public is limited and the same applies to research exploring the effectiveness of public participation in EIAs for mining development. Practitioners may not accommodate the public due to lack of education of community members and inequality gaps, resulting in stigmatisation from global companies (Hildebrandt and Sandham, 2014). Therefore, Impact Assessments may be viewed as tokenistic tools to approve development, due to the inefficiency of the participatory process, making it clear that public participation principles within the IAIA regulatory principles in African SIAs are questionable.

The Sub-Saharan African SIA project cycle is often not followed through, resulting in limited literature about strategies and management plans to use as reference to conduct a thorough SIA. It appears that EIAs and SIAs are used to intentionally prevent IAP concerns and just to approve development within sub-Saharan Africa (Leonard, 2017c). There is a lack of understanding of public participation and documentation through government and businesses practices in the EIA and SIA. It is non-transparent, and leaves confusion and lack of references and literature.

Reports indicate a lack of alignment between SIAs and public participation. The government and industry need novel strategies to meet new standards for public participation in the mining industry, aligning with the Mineral and Petroleum Resources Development Act of 2002. Such efforts are evident in the SIA, where the Act stipulates the development of SLPs to enhance community participation in mining areas (Mdamba, 2021). The challenge lies in the absence of oversight in legislation and guidelines, negatively impacting the development of a shared

understanding among all stakeholders (Mdamba, 2021; Leonard, 2017b). Additionally, issues persist in the public participation processes within the mining sector, with a lack of a shared vision among communities, mining companies, municipalities, and the Department of Mineral Resources (DMR) on how public participation processes on the SLP should be conducted (Mdamba, 2021). Affecting public participation processes is how the state has enormous power over decisions. This is seen in MPRDA 28 of 2002 where proponents are given prospective rights without consent from affected stakeholders or community members (Chagwinya, 2018). Such a case in South Africa is when a mining industry caused Sekurnwe communities to lose land to tailing dams (Saccaggi, 2013).

In South Africa, the absence of clarity surrounding the SIA and participatory processes, coupled with the lack of established guidelines in the NEMA, result in a scarcity of credible references and limited literature for comprehending and conducting effective SIAs. In Mpumalanga, there is minimal evidence available to comprehend the fundamental factors hindering the achievement of participatory environmental decision-making, with unclear explanations provided (Leonard, 2017b). Additional research is imperative to determine the obstacles to public participation in the SIA.

Public participation practices are placed within the SIA, but in literature public participation practices are not generally favoured. In addition, there is no research body that can assist and direct practitioners when doing an SIA. As seen with the cases in Africa and South Africa, public participation has not met the required standards. Further confusion stems from social scientists and practitioners who view the public participation process as an entire replacement of SIA, resulting in not understanding or taking interest in the correct procedures. The SIA should be a stand-alone process, with equal weight, this may shed light on the correct procedures of how to conduct public participation (Chidzungu, 2019). Currently participatory practices within Africa and South Africa are not following international standards of the RIO Declaration, Aarhus Convention, and IAIA. This is exacerbated by the current confusion in, and the orphan status of, the SIA within the EIA. Conversely, South African practitioners' perspectives suggesting that the SIA and EIA processes should not be standalone, and should remain integrated to avoid further legislative confusion, goes against Chidzungu's point that the SIA should be a stand-alone process (Chidzungu, 2019). So, the debate by scholars suggesting that the SIA be integrated within the EIA or be a stand-alone process will still leave issues with public participation because participation practices currently are not meeting the legislative standards since issues such as inequality within developing countries are not being

addressed. According to theories of scholars and practitioners, the public participation process may even go as far as being used as a tool to aid mining development, with biased consent from limited community members and consultants.

CHAPTER THREE

METHODOLOGICAL CONSIDERATION

3.1 Introduction

This chapter is dedicated to discussing the methods that were implemented in this study. By definition, a methodology refers to the systematic, theoretical analysis of the methods applied within a particular field of study or discipline. It encompasses the principles, techniques and procedures used to conduct research, investigations, or any systematic activity to achieve specific objectives or goals. Methodology outlines the framework, tools and approaches employed to gather data, analyse information, and draw conclusions within a given research or study context (Goundar, 2012). In view of this therefore, for a study of this nature, it is important to present a methodology that is comprehensive and can be replicated. This chapter therefore is divided into five subsections. The first looks at the introduction to the methodology. The second subsection examines the researcher's philosophical positionality, while the third section delves into the research design of the study. The fourth subsection investigated the data analysis, and the fifth and final deals with the methodological reflection.

3.2. Philosophical positionality

As a researcher exploring the role of public participation in facilitating a comprehensive SIA process in the Carolina Town community of Mpumalanga, the chosen epistemological standpoint to understand reality is founded upon constructionism. Constructionism posits that truth and knowledge are constructed through the incorporation of diverse perspectives, experiences and interpretations. It recognizes the subjectivity inherent in human understanding and acknowledges that truth is not absolute but shaped by context, culture and individual perceptions (Andrews, 2012).

As a white South African researcher embarking on a study focused on public participation in the Carolina Town community, the awareness of the researcher’s cultural background was pivotal in navigating interactions within this predominantly African setting. Acknowledging the potential impact of the researcher’s cultural identity on engagements with the community was paramount.

Embracing the constructionist philosophy guided the researcher's approach, prompting him to recognize and appreciate the diverse cultural perspectives prevalent within Carolina Town.

This self-awareness prompted sensitivity, reflexivity, and a deep respect for the local culture. To navigate this dynamic, the researcher prioritized building meaningful relationships based on mutual respect and trust. Engaging with the community involved active listening and a genuine curiosity to understand their perspectives without imposing the researcher's preconceived notions. Adopting a constructionist framework allowed the researcher to value and integrate the rich tapestry of viewpoints, experiences and interpretations shared by the community members.

Employing a constructionist philosophy facilitated a collaborative research approach. It encouraged an inclusive environment, fostering open dialogue and welcoming diverse voices. The researcher created a space where community members felt empowered to share their perspectives, ensuring their narratives were not overshadowed by the researcher's background or assumptions. By embracing the constructionist viewpoint and remaining sensitive to the cultural context, the researcher endeavoured to bridge potential gaps and build a rapport that transcended cultural differences. This approach aimed to facilitate a respectful and holistic engagement, enabling a genuine representation of the community's experiences and perspectives within the study.

3.3 Research design

3.3.1 Description of the research type.

The study area is situated within the CALLM, which falls under the jurisdiction of the Gert Sibande District Municipality in Mpumalanga, South Africa. Specifically, the area of focus is the Carolina Quaternary catchment area X11B in Mpumalanga, South Africa, as illustrated in Figure 3.1. This town serves as a hub for providing essential services to the local farming community.

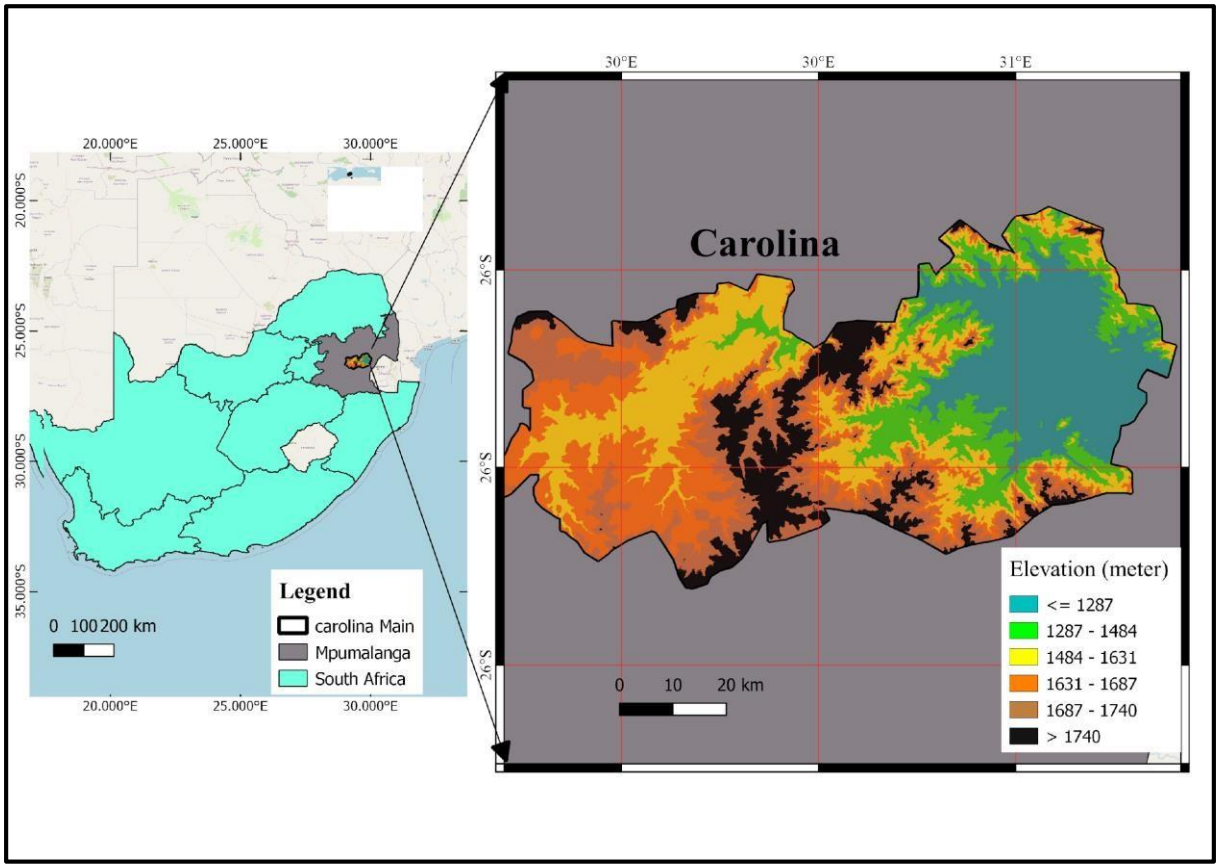


Figure 3.1: Map of the Carolina Quaternary Catchment area X11B, in Mpumalanga, South Africa.

Carolina holds significant potential for growth in various sectors, including agriculture, livestock, grain production and forestry. Additionally, there is potential for economic growth in the transport sector, particularly concerning the transportation of agricultural goods (Data World Pty. Limited, 2019). Land use in the vicinity of the town includes coal mining, which is a predominant activity. Several mines operate within the Carolina study area, including Msobo Coal, which manages a coal siding called Witrand. Msobo Coal operates two mines, Tselentis and Verkeerdepan, with an anticipated lifespan of 12 years (Munnik et al., 2010). As of 2016, the Chief Albert Luthuli Local Municipality had a projected population of 187,630, and this figure is estimated to reach 192,952 by 2030. In comparison, the Gert Sibande District Municipality had an estimated population of 1,135,409 (Gert Sibande IDP, 2018-2019).

Concerning the environmental characteristics of Carolina, the town, which is located in Mpumalanga, South Africa, is characterized by diverse topography types. The catchment areas around Carolina also encompass the Limpopo River, making the water susceptible to coal mining-related pollution from the Mpumalanga highlands. The climate in Mpumalanga exhibits

temperature variations, ranging from an annual mean of 16°C to a mean of 23°C, depending on the locality, whether it falls in the cooler Highveld or the warmer subtropical lowveld (Chidzungu, 2019).

The selection of the Quaternary catchment area X11B in Carolina, Mpumalanga, as the study area is motivated by its involvement in the 2012 Acid Mine Drainage (AMD) controversy, widely reported in national media. Additionally, coal mining activities are concentrated in Ward 21 of the CALLM, where the Carolina study site is located. Carolina boasts an array of stakeholders with significant experience and knowledge regarding AMD's impact on postmining communities and the assessment practices conducted within the region, making it an ideal focal point for the research (Chidzungu, 2019).

Moreover, the chosen study area has a history of pollution that has compromised the livelihoods of community members. For instance, in 2012, the Bronkhorspruit Dam, the primary water source for Carolina town, was contaminated with AMD from operational and abandoned mines and transport hubs within the upper Komati Quaternary catchment area X11B. Furthermore, Carolina is under the purview of the upper Komati Catchment Management Forum within the Inkomati-Usuthu Catchment Management Agency (IUCMA), which includes the town in stakeholder discussions concerning mineral development and its impacts on communities. Consequently, archival material related to environmental issues and social analyses of the town's impacts are readily accessible (Tempelhoff *et al*., 2014).

3.3.2 Study population and sampling procedure

The research took place within the town of Carolina, located in the CALLM, situated within Mpumalanga, South Africa's Gert Sibande District Municipality. Appendix 4 shows the permission letter to conduct study in CALLM. Carolina stands out for its vibrant demographics, predominantly comprising a youthful population actively engaged in mining-related economic activities. With an estimated population of 187,630 individuals, Carolina embodies a diverse socio-economic landscape, notably characterized by a substantial representation of low-income residents, alongside a concentration of mining-related endeavours.

The deliberate selection of Carolina as the research site was motivated by its unique socioeconomic composition, serving as a microcosm of varied backgrounds and economic strata. This community encapsulates an intriguing blend of mining-centric activities and a demographic featuring a significant proportion of individuals facing economic challenges.

The rationale behind focusing on Carolina for this study was to delve deeply into the exploration and comprehension of specific issues within this distinct socio-economic milieu. The convergence of mining activities within a setting marked by economic hardships offers an intricately nuanced environment. This environment is particularly conducive to understanding the dynamics and nuances surrounding public participation within the community.

The presence of economically disadvantaged residents in a locality significantly reliant on mining activities presents an ideal backdrop for scrutinizing the roles, challenges and implications of public participation within the broader societal framework. Thus, the concentration of mining-related activities and the coexistence of diverse socio-economic strata make Carolina an ideal setting for a comprehensive examination of public participation dynamics within the community.

The qualitative study employed purposive and snowball sampling techniques to identify participants for data collection. Purposive sampling allowed the researcher to intentionally select individuals possessing relevant knowledge and experience concerning the Carolina area. Participants were chosen based on their familiarity with the community, including residents, officials, activists and professionals engaged in various facets of community life such as governance, mining, environmental management, and local government.

Initial participants comprised representatives from the IUCMA, mining officials involved in community interactions, mining activists, biotechnologists and local government officials from the CCALM. These individuals were selected due to their roles and direct involvement in the community's dynamics.

The snowball sampling technique was subsequently employed to expand the participant pool. After engaging with the initial participants, the researcher sought referrals from them, leveraging their networks within the community. Referrals provided access to additional individuals with a nuanced understanding of the Carolina community, ultimately resulting in the identification of a total of 45 participants for the study. As data was continuously collected there was a notice of repetition in themes and no new information emerged, this further suggested the research has reached data saturation, indicating a sufficient sample size (Fusch and Ness, 2015).

3.3.3 Data collection

Interviews served as a primary method for collecting qualitative data. They involved engaging with various stakeholders, including community leaders, mining officials, government representatives, and other involved parties. Through these interactions, the researcher aimed to gather in-depth insights, opinions, and perspectives related to public participation in the context of mining development. These interviews occurred in settings such as public forums and community meetings, allowing for discussions that shed light on the impacts and perceptions surrounding public participation in SIA processes. However, limitations included the potential for biases introduced by either the interviewer or interviewee, as well as time constraints that could restrict the depth of discussions. Appendix 2 shows the permission letters for a forum meeting during data collection.

To complement the qualitative data obtained through interviews, semi-structured questionnaires were utilized. These questionnaires were designed specifically to capture information on SIA participation, its effects on community well-being, and the environment. They were distributed during community forums and filled out by participants, providing standardized data for statistical analysis. While questionnaires offered scalability and standardized data collection, potential drawbacks included response bias and limited space for detailed responses.

The methodological approach drawn from Chidzungu (2019) influenced the data collection strategy in this study. By distributing semi-structured questionnaires and conducting focus group interviews, the researcher aimed to glean insights into the involvement of community members and IAPs in public participation processes related to mining development. Additionally, interviews with mining officials, government representatives and community leaders during public forums provided valuable perspectives on the role of public participation in facilitating comprehensive SIAs.

Ethical considerations were paramount throughout the data collection phase. The study commenced primary data collection only after receiving ethical clearance from the Wits Human Research Committee with ethical clearance number of H21/05/12, ensuring adherence to ethical standards and safeguarding the rights and privacy of the participants.

3.3.4 Data Analysis

Data analysis in this study encompassed two primary methodologies: preliminary descriptive statistics and thematic content analysis.

Preliminary descriptive statistics were employed to organize and summarize the demographic information of the study participants. Excel and Microsoft Word were utilized as tools for managing and presenting the data. Using this software, the collected demographic data underwent tabulation and computation of summary statistics. Visual representations such as pie charts, bar graphs, and tables were created to interpret and present the analysed demographic data within the study report.

In contrast, thematic content analysis was used to analyse the qualitative data derived from interviews. This method aimed to identify recurring themes, patterns, and meanings within the qualitative data. Prior to analysis, the raw qualitative data underwent a process of data cleaning and organisation, involving transcription of spoken content into written text to ensure accuracy and uniformity for analysis purposes.

The data was then systematically coded and categorised based on emerging themes or topics from the interviews and video recordings. This coding process facilitated the identification of patterns and overarching themes within the dataset. Through iterative review and analysis, these themes were further refined and interpreted, reflecting key concepts, perspectives, or ideas inherent in the qualitative dataset.

3.3.5 Methodological reflections.

One pivotal factor in the success of this research was meticulous planning and preparation. Adequate financial planning and securing necessary resources beforehand allowed for smooth execution of the study.

Additionally, embracing a methodical approach to data collection and analysis proved instrumental. Employing diverse data collection tools, including interviews, questionnaires, and focus groups, allowed for a comprehensive understanding of the subject matter. Collaborating with community leaders and stakeholders fostered trust and facilitated access to crucial information and insights.

Moreover, the researcher's commitment to transparency and ethical practices ensured the credibility of the study. Obtaining ethical clearances and engaging in open communication with the participants and stakeholders contributed significantly to the success of the research.

Undoubtedly, being an outsider to the community posed significant challenges. As a White/Caucasian researcher not fluent in the local language, there were perceptions of bias or favouritism towards local mining companies. To mitigate these biases, the researcher actively

worked on building trust and credibility. Hiring individuals from the community to assist in distributing questionnaires helped bridge cultural and language barriers, fostering greater acceptance and understanding within the community.

Time constraints and logistical difficulties were also notable challenges. Overcoming these hurdles required meticulous planning and flexibility in research methodologies. The use of innovative approaches, such as leveraging community forums organized by local authorities, provided opportunities for data collection within limited timeframes.

Ensuring that the research process was inclusive and respectful of diverse perspectives was critical. Establishing clear communication channels and actively listening to community members' concerns and feedback helped address misconceptions and foster a more collaborative research environment.

CHAPTER FOUR

EMPIRICAL EVIDENCE

4.1 Introduction

This chapter presents the findings of this comprehensive study focused on the relationship between public participation and SIAs within mining communities, focusing on the Carolina community. The research endeavours to explore and dissect the multifaceted elements of community involvement in SIA processes, aiming to unravel the extent, effectiveness, challenges, and impacts of such engagement. According to Momtaz (2006), in developed countries, involving the community in the decision-making process is an integral part of SIA. While SIAs have now been firmly established in the planning process in developing countries, community participation in project inception, implementation and monitoring remains a contentious issue.

Therefore, it is important to present empirical evidence for this study. In view of this, the chapter is structured in the following way: Section 4.2 deals with the demographic characteristics of the participants. Then Section 4.3 delves into Research Question 1, where it aims to know how comprehensive public participation processes are in facilitating a comprehensive SIA when dealing with mining activities in the Carolina community. This research question delved into the specific mechanisms and practices through which community members actively engage in the SIA process. It uncovered how the input and involvement of the community influence the overall effectiveness of SIAs in addressing mining impacts and promoting sustainable development in Carolina.

In Section 4.4, this study provides empirical evidence for research question 2: “In what ways are the current public participation practices effective in identifying problems, needs and values of the Carolina mining community?” The section delves into the effectiveness of participation practices in communities affected by mining activities around Carolina. This research question shed light on how these practices contribute to community well-being and addresses socio-economic and environmental impacts. Section 4.5 shows empirical evidence to research question 3: “To what extent is public participation significant in understanding the impact of mining on the surrounding natural environments?” Then Section 4.6 of this chapter provides empirical evidence on the research question 4 which deals with the barriers to public participation in the SIA development and its implications for sustainable development with particular focus to the Carolina town. By identifying the barriers and obstacles faced by

community members, the research aimed to highlight the complexities of engaging with mining companies and other stakeholders. The study provided an in-depth analysis of the challenges faced by the community in effectively participating in the SIA process.

To get answers to the research questions outlined above, the research utilised a variety of data sources including interviews, literature documents, to provide a comprehensive and detailed analysis of public participation in SIAs within the Carolina community.

4.2 Demographic characteristics

The demographic profile of the participants in the Carolina community survey provides valuable insights into the social and economic characteristics of the community members.

4.2.1 Social Characteristics

Gender ratio

The survey consisted of 45 participants with a balanced representation of gender, as shown in Figure 4.1.

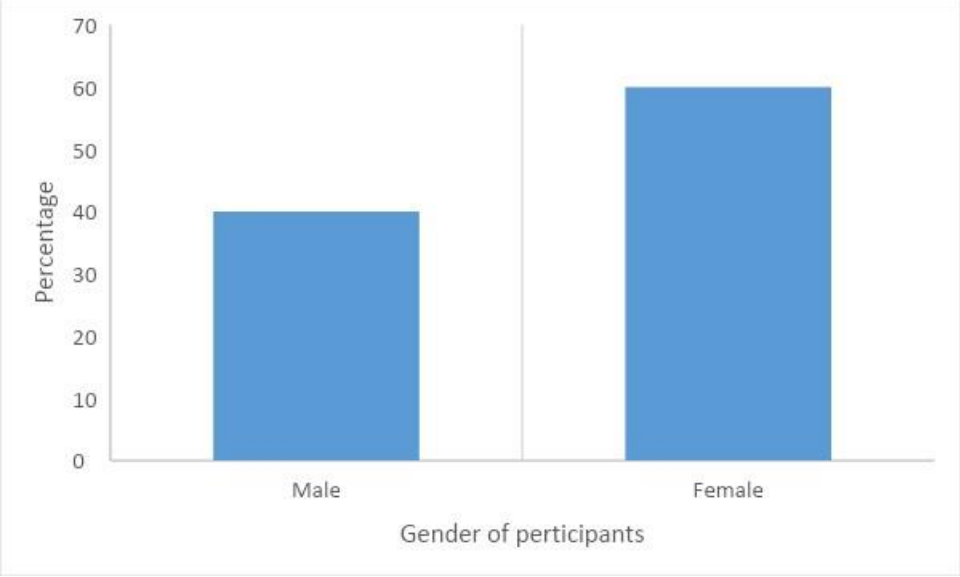


Figure 4.1: Gender participation for the study

The data analysis from the study revealed an interesting gender disparity in public participation within the Carolina community affected by mining activities. The findings indicated a higher proportion of women (60%) actively involved as the participants in the research, compared to men. This observation prompted an exploration of the underlying reasons contributing to this difference. One of the primary reasons highlighted by participants was the genuine concern and

passion that women showed for the well-being of the community. Women tended to be more invested in addressing social and environmental issues, driven by their desire to create a better future for their families and children. A woman respondent said that:

"Women are very important in this community…. We take care of our families."

The historical and cultural factors played a role in shaping the gender dynamics of participation in the Carolina community. Women have traditionally held significant roles in the community's social fabric and have actively participated in various community activities over time. This historical involvement has translated into their active engagement in developmental matters, where their perspectives and contributions are highly valued. One respondent commented,

"Our women have always been pillars of our community, taking active roles in decision-making and community projects. It's a tradition we are proud to continue".

The study also identified the cooperative nature of women as a contributing factor to their higher representation in public participation. Women were more willing to collaborate and work together towards community development, fostering a sense of inclusivity and mutual support. This cooperative approach made them more visible in decision-making processes and further enhanced their participation. One participant emphasized,

"As women, we understand the strength of unity, and that's why we actively participate in community projects together, supporting one another".

Age distribution

Another notable aspect that the participants observed and explored during the study was the dynamics of the age distribution among them. The age distribution indicated a relatively younger population, with 44% (19 participants) falling within the age group of 18-30 and 40% (18 participants) within the 31-40 age bracket. Smaller proportions represented the age groups 41-50, 51-60, and 61-70, (Figure 4.2).

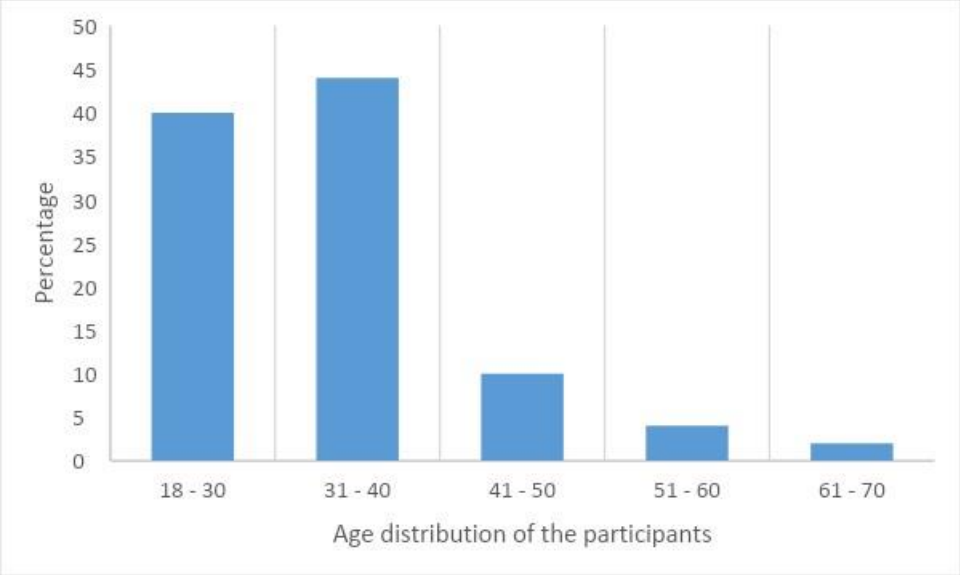


Figure 4.2: Age distribution of the participants as recorded during the interview process

The age distribution portrays a relatively youthful demographic in the Carolina community. This indicates a significant proportion of the population comprising individuals in their late teens to early forties. This suggests a declining trend in population as age increases, indicating a smaller representation of older individuals within the community.

The higher representation of younger individuals in the study implies an active involvement of the youth in community matters, including engagement in discussions related to the impact of mining activities. This could signify a strong interest and concern among the younger generation when it comes to community issues and their willingness to actively participate in addressing them. A participant from the younger age group (18-30) expressed himself saying,

"*As a young member of this community, we want to voice our concerns and contribute to making positive changes. Our generation is deeply invested in the future of Carolina.*"

Educational background

The data illustrates that the majority of participants have acquired at least a secondary education, followed by tertiary qualifications and a smaller percentage, held primary education qualifications (Figure 4.3).

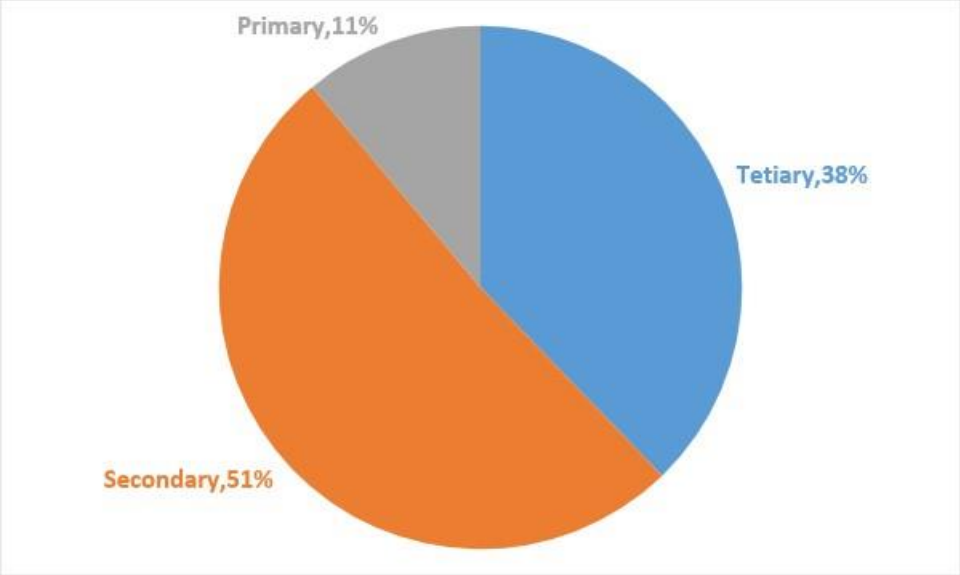


Figure 4.3: Educational background of the participants

This distribution implies a relatively high level of educational attainment among the participants. The prevalence of secondary and tertiary education among participants suggests a potential positive impact on community development. Individuals with higher educational qualifications might possess skills, knowledge and critical thinking abilities that could contribute significantly to addressing community issues and fostering engagement in developmental activities.

Higher levels of education often correlate with increased civic engagement and participation in community affairs. The presence of individuals with tertiary qualifications indicated a group inclined towards active involvement in decision-making processes and community initiatives.

Number of years participants lived in the Carolina community

In terms of the length of residency in the Carolina community, 40% (18 participants) of the participants had lived there for 26 years and above, suggesting a strong connection and familiarity with the area. The remaining participants were distributed across different duration categories, with 30% having resided for 6-10 years, indicating a mix of long-term residents and newcomers (Table 4.1).

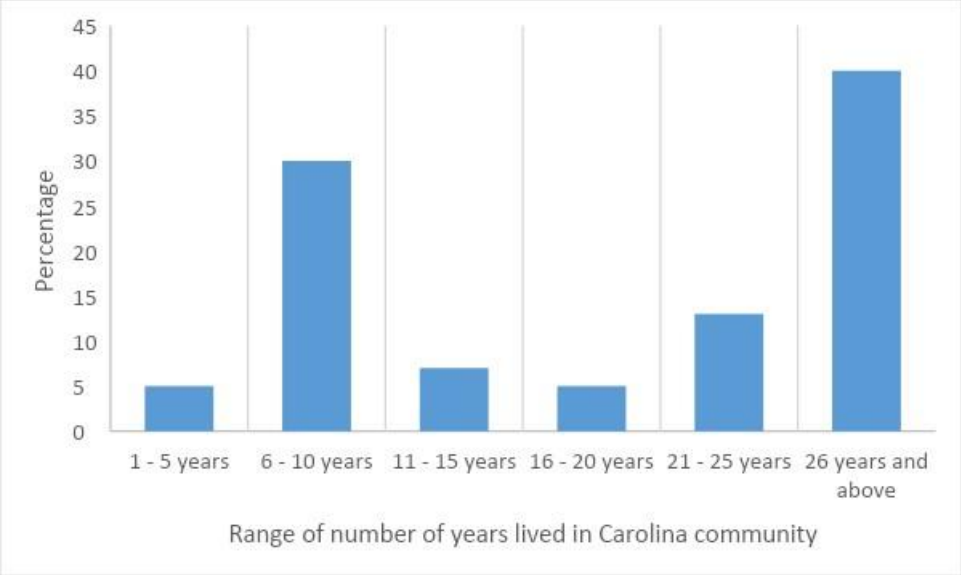


Figure 4.4: Response from the participants showing the range on the number of years they have lived in the Carolina community.

The high percentage (40%) of participants residing in Carolina for 26 years or more signifies a strong bond and familiarity with the community. These long-term residents are likely to have a profound understanding of the area's history, traditions, and local dynamics, as one respondent testified: *"…. I have lived here for years, I've seen the community evolve. I know the community very well and my roots are here…."*

The length of residency data highlights a diverse mix of residents within the Carolina community, with a significant percentage having deep roots and long-standing ties to the area. The presence of both long-term residents and newcomers potentially fosters a dynamic community environment, blending established traditions with fresh perspectives and ideas for the future development of Carolina.

4.2.2 Economic Characteristics

Employment status

The employment status and occupations among the participants in the Carolina community study, (Figure 4.5), revealed several significant aspects about the community's economic landscape.

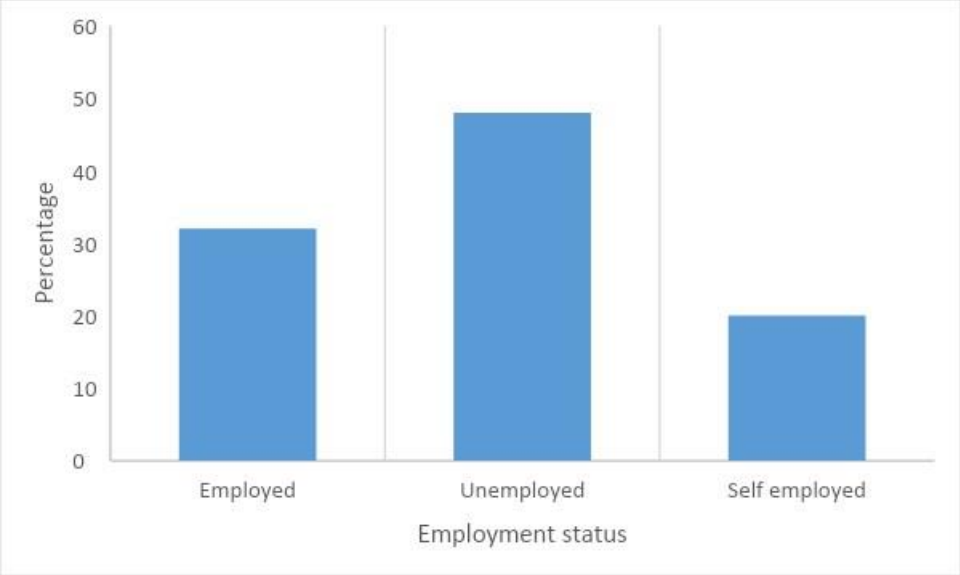


Figure 4.5: Employment status among the participants during the sample collection

Figure 4.5 illustrates a diverse range of employment statuses among the participants. This showcase of a combination of individuals in different employment situations indicates a varied economic scenario within the Carolina community. The participants represented various professions, including TLB operators, general workers, nurses and hair stylists. This diverse range of professions reflects the multifaceted nature of the community's workforce, encompassing individuals with different skills and expertise contributing to various sectors. However, a participant experiencing unemployment expressed their frustrations.

"*…finding stable employment here can be tough. Many of us are skilled and ready to work, but no jobs …*"

A self-employed participant mentioned,

"*I have my own business. I sell food in the taxi rank….*"

The employment status and occupational diversity data reveal a varied economic landscape within the Carolina community. While there is a diversity of professions and skills represented among the participants, the high percentage of unemployed individuals highlights potential challenges in the job market or underemployment issues. This highlights the need for potential initiatives to address employment opportunities and economic development within the community.

Property ownership

Participants were asked if they had property in Carolina community (Figure 4.6).

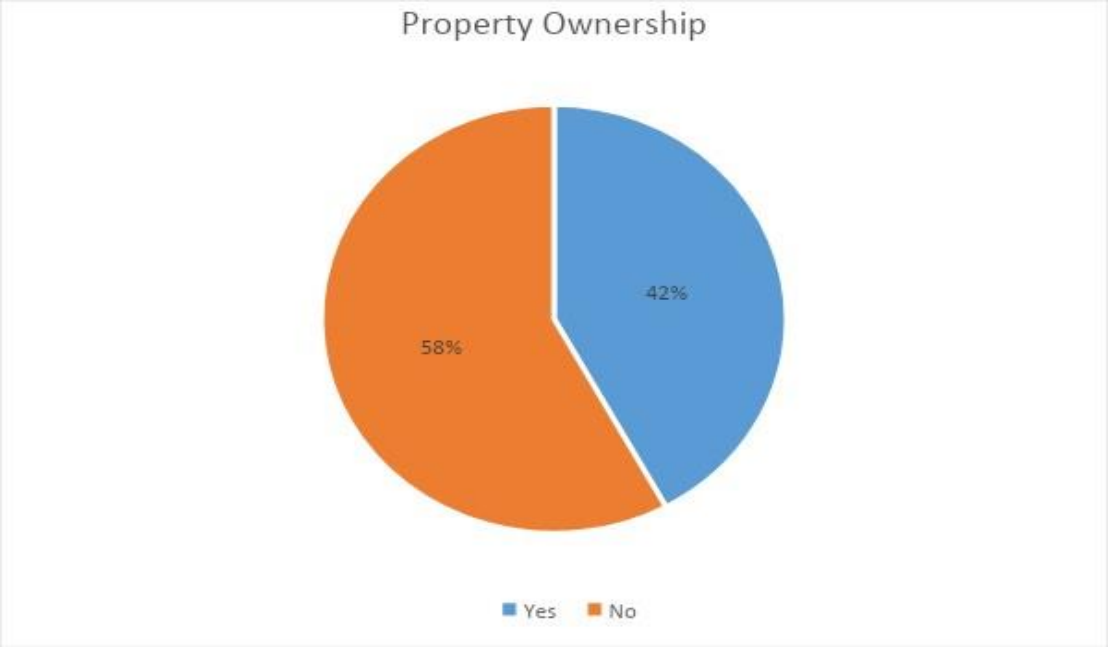


Figure 4.6: Response from the participants when asked if they owned a property in Carolina community

Figure 4.6, the finding explains the importance of considering the perspectives of both property owners and non-owners when assessing the potential impacts of mining operations or any community-related activities within Carolina. Property owners and non-owners might have differing interests, concerns, and stakes regarding issues like mining operations, land use, environmental impacts, and community development. Understanding these varying perspectives is crucial for comprehensive decision making.

Property ownership might influence the level of involvement, influence and stake individuals have in community decisions. Property owners might have a more vested interest in the community's future and be more actively engaged in discussions and decisions related to community development. However, one non-property owner interviewed reasoned:

"*…I don't have a house of my own doesn't mean I cannot participate in the community….*"
Therefore, understanding the varying viewpoints of property and non-property owners in the community is essential for inclusive and comprehensive discussions related to community development and potential impacts of initiatives like mining operations.

Household income

The household income data indicated diverse financial situations among the participants (Figure 4.7).

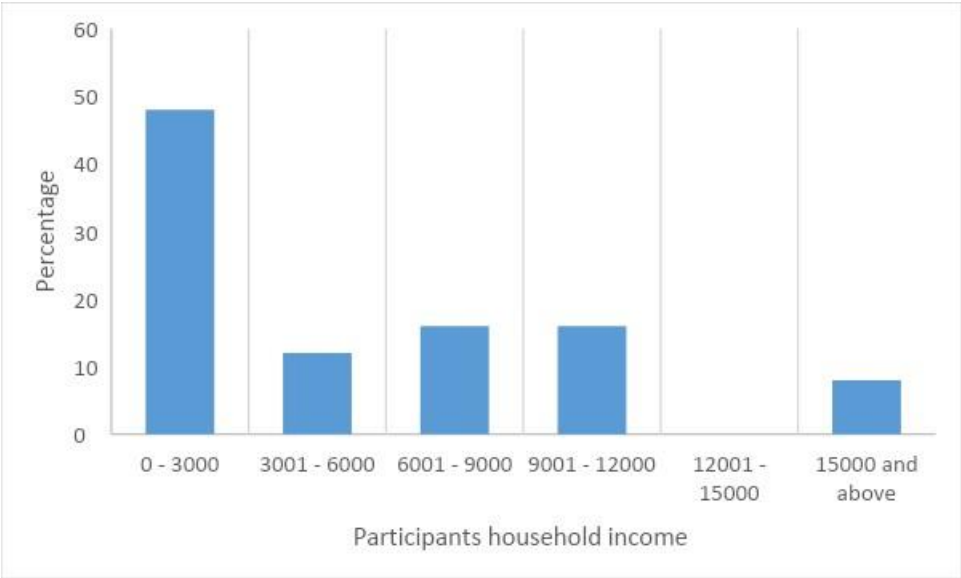


Figure 4.7: Participants response on Household income in Carolina community

Figure 4.7 shows the largest proportion, reported an approximate monthly household income of 0-3000 Rands and smaller number of the participant's income ranging from 3000 Rands and above. This income distribution explains the economic disparities within the Carolina community. The household income data provided a glimpse into the economic disparities that exist within the Carolina community. The distribution of income levels among the participants varied significantly, with a substantial proportion, (48%), reporting a monthly household income of 0-3000 Rands. The disparity in income levels can be attributed to various factors. One of the main reasons for the concentration of participants in the lower-income bracket could be the prevalence of unemployment or underemployment within the community. A significant number of individuals in the Carolina community struggle to find stable and well-paying employment opportunities, leading to lower household incomes. Moreover, the community's economic dependence on mining activities may also contribute to income disparities. In mining communities, employment opportunities are often concentrated in the mining sector. Those who secure jobs within the mines may earn higher, while others engaged in other sectors or informal work might earn lower wages.

4.3 An assessment of the current public participation in SIA in mining communities in Carolina

The findings from the participants shed light on the ways in which public participation contributes to an effective SIA in the Carolina community. The responses reflect a range of

perspectives and experiences within the community regarding their motivations, existing activities for participation and their general engagement with the Carolina mine operatives.

4.3.1 The Carolina's community perception on effectiveness of public participation in the SIA process between the mines and the community

The study involved the participation of technocrats, communities' members, homeowners and various stakeholders. Participants were asked how effective public participation in SIA between the mines and the community was, and the responses were captured in Figure 4.8.

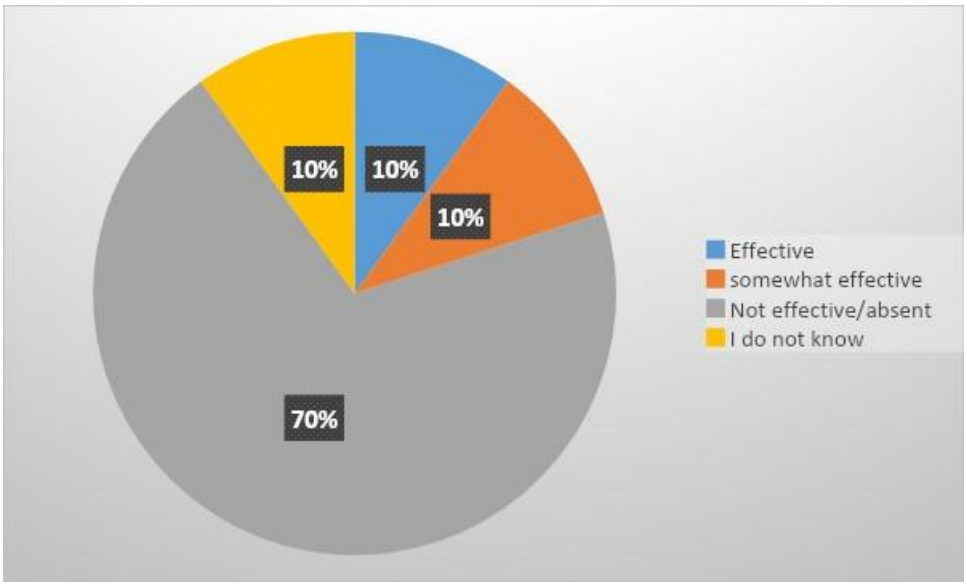


Figure 4.8: Perception of how effective the participant's participation in SIA survey was based on field work surveys, 2023.

Among the participants in the study, a significant portion, expressed that role of public participation in SIA in their community is not effective, while a smaller percentage of the participants expressed that public participation is somewhat effective, effective or did not know about public participation (Figure 4.8). Most of the participants expressed their dissatisfaction with the inefficiency and lack of involvement in public participation with the Carolina mines activities. These individuals felt excluded from the decision-making processes and expressed concerns about the limited opportunities to voice their opi nions and concerns regarding mining activities in the community. One of the participants said:

"*I have never engaged with the mines*"

Another participant complained:

"We don't know where they conduct the meetings….. We wish we were in these meetings."

“They only take rich people for the meeting and we the poor are not involved”

A further 10% of the participants went on to assert that there was a complete absence of public participation in mining-related matters. A participant said

“*There are no meeting in the community”* while another said:

“The mines do not care about the community... they don’t meet with the community.”

This finding highlights a systemic weakness in the current approach to public engagement within the Carolina community.

To further buttress the effectiveness of public participation, the community members were asked to describe their experience of participation between the community and the Carolina mines operatives. Some participants expressed limited or no engagement with the mines. However, most of the respondents were of the opinion that they have never interacted with the mine’s activities. One participant stated;

"*I have never engaged with the mines,"* highlighting the absence of interaction and participation opportunities.

On the other hand, some of the respondents that were able to attend meetings described their experiences as negative or not good, suggesting a strained relationship between the community and the mine operatives. One respondent expressed their disappointment by saying:

"It was a negative experience. The mines don't listen to us or comply with our requests."

This reflects the perception that the mine operatives are not responsive to the community's concerns and expectations. Moreover, some respondents expressed a sense of disconnection and a lack of relationship between the community and the mine operatives. They indicated a need for improved communication and engagement. One respondent conveyed their experience by stating:

"We don't have a relationship with the mines. We want to be in their meetings…."

This reveals a gap in communication channels and a perceived lack of effort from the mine operatives to involve the community in decision-making processes. These experiences highlight the importance of a more inclusive and collaborative approach to public participation in the Carolina community.

In terms of mode of communication between the community and the mining company, some respondents mentioned the involvement of consulting companies and forums that interact with the community and report to the mine operatives. However, it remains unclear whether these activities result in effective communication or meaningful community influence on the decision-making processes. The perception of limited outcomes from existing activities was evident in the responses. One respondent explained,

"Normally the forum will talk to the community, and then they will claim that they will report to the mines."

This suggests a need for greater transparency and follow-through in the reporting and feedback processes. Community leaders, such as the chief, were mentioned as intermediaries involved in engaging with the mine operatives. This highlights a potential avenue for facilitating communication between the community and the mine operators. Social media platforms, such as Facebook pages were also used as highlighted by some who said: "*We use Facebook to receive updates from the community*".

These opinions were given by few respondents as a means of engagement. This indicates the need to explore digital channels for improved communication and information dissemination.

4.3.2 Motivation and expectations in engaging in the participation between the community and the mines

When the participants were asked "What motivated you to want to engage in the participation with the mine operatives and what were your expectations?" most of them emphasized the significance of job opportunities provided by the mine operations, as shown in Figure 4.9.

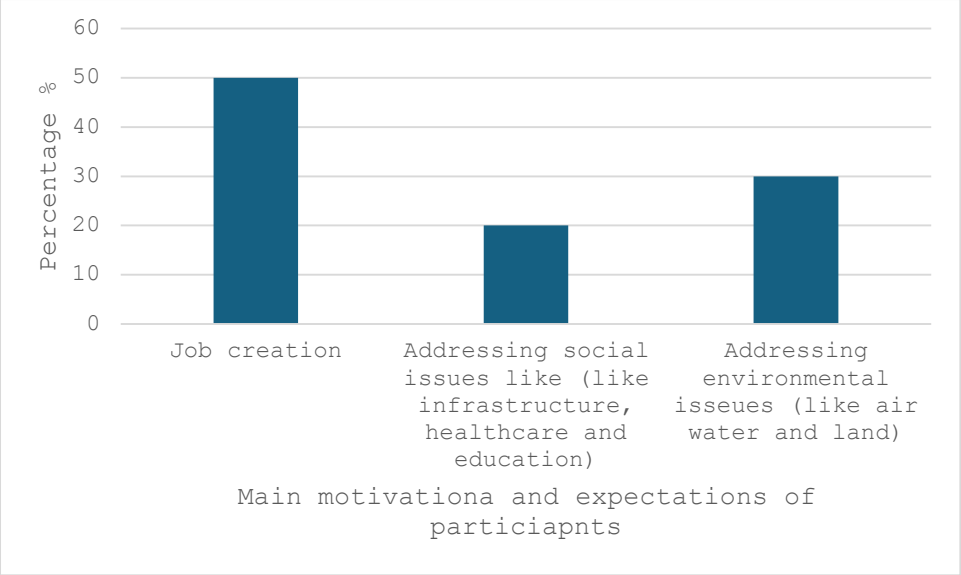


Figure 4.9: Overall motivations and expectations of the participants in the reasons for participating in engagements with the mine operatives.

Most of the participants saw employment prospects as a crucial motivating factor, reflecting the desire for economic benefits and improved livelihoods within the community. Half (50%) of the participants expected the mines to create some sort of employment for them and their family members.

One respondent expressed their motivation by stating:

"Jobs are scarce, so any chance of employment from the mines is important to me."

Some other quotes from other participants are highlighted below:

"I attended the community meeting with the mine's operators because I have been unemployed for months, and any opportunity for a job is crucial for my livelihood."

"Finding a job in the mines can significantly improve my family's financial situation, and that's why I actively participate in these meetings."

"The lack of job opportunities in the area has been a pressing issue for years, and attending the community meeting with the mine's operators gives us a chance to advocate for more employment opportunities."

"Job opportunities in the mines are highly competitive, so participating in these meetings allows us to express our interest and commitment to securing employment."

These quotes highlight the scarcity of jobs in the area and the perceived importance of engaging with the mine operatives to access employment opportunities. Furthermore, respondents

mentioned their expectations of job creation and economic development resulting from the mine operations. They anticipated that increased employment would positively impact the local economy and contribute to the overall well-being of the community. As one respondent mentioned:

"My expectation is that the mine will bring more job opportunities, which will improve our lives and boost the local economy."

"Unemployment rates have been high in our community, and engaging with the mine's operators is essential for voicing our need for more job creation."

In addition to employment considerations, other expectations were raised regarding community well-being and the resolution of social issues. About 20% of the respondents expressed a desire for the mine operatives to address community concerns and improve the living conditions in Carolina. One respondent explained:

"I expect the mine to address the social issues we are facing, such as lack of infrastructure and services."

This indicates an expectation that the mine will contribute to social development and address existing challenges in the community. Other participants expressed:

"I attended the community meeting with the mine operators because our community lacks basic infrastructure and services, and we need the mines to address these pressing social issues."

"Inadequate healthcare facilities and schools are affecting our community's well-being, and the meetings with the mines is a chance to seek their support in addressing these challenges."

"The mines' operations have caused housing shortages and increased homelessness in our community."

"*They have contaminated our water and our lands"*

"*We do not breathe good air anymore, we want to address this in the meetings"*

The participants' responses highlight the original motivation of community members to engage with the mine operatives in the hopes of securing job opportunities and improving their socioeconomic conditions. Their expectations extend beyond employment, encompassing broader community development aspects. These expectations reflect a desire for positive

impacts resulting from the mine operations and a belief that the engagement process can lead to meaningful change within the Carolina community.

4.4 Assessing the role of public participation in identifying community challenges and status in Carolina

This subtopic delves deeper into understanding the roles of participation practices employed in communities that experience mining impacts in the vicinity of Carolina town. It aims to examine the level of community engagement in decision-making processes, the extent to which community inputs influence mining operations and the overall impact of such practices on the well-being of the local residents. By analyzing participant responses and incorporating relevant literature, this subtopic seeks to identify strengths and weaknesses in the existing participation practices and propose potential improvements to promote a more inclusive and effective approach. In the context of exploring the effectiveness of participation practices in the SIA process for communities subjected to mining impacts around Carolina Town, the responses provided by the participants shed light on the factors that either encouraged or hindered their participation.

4.4.1 "Does public participation help in identifying challenges in the community?"

The participants were asked whether public participation helps them identify the challenges that they have. Their views are captured in Figure 4.10.

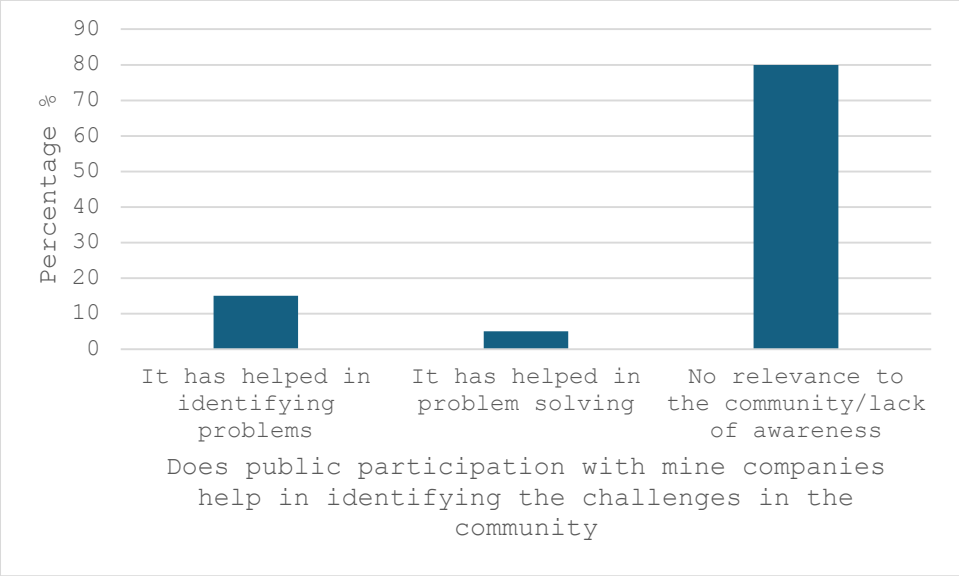


Figure 4.10: Views on whether public participation helps participants identify the challenges or solve problems in their community.

Most of the participants (80%) expressed a lack of awareness about the public participation process in their community, with one stating,

“I don’t know what the public participation process is.”

Another participant asked a question back to the interviewer,

“What is a the public participation process about”

showing a blunt knowledge of the concept. Other participants noted:

"Public participation is not well-publicized or communicated to the community, so many of us are unaware of its existence."

"There is a lack of awareness and education about the public participation process among community members."

Another enthusiastic participant said:

"I'm not familiar with the public participation process, and it has never been explained to me properly by anyone in the community. The mining company and other relevant authorities have not made any effort to engage with us and provide clear information about the process. This lack of transparency and communication leaves us in the dark, and we are left wondering how this process impacts our lives and the environment."

This response highlights the importance of effective communication and information sharing between mining companies and the community. Transparent and regular communication can build trust and encourage community members to participate more actively. The participants' desire to attend public participation meetings was evident, some of the respondents expressed this desire saying,

“*I really wish I could attend one of the meetings, but most of the time, they are held at inconvenient times and locations. As a working individual with responsibilities, it's challenging to take time off to attend these meetings, especially when they are scheduled during working hours or far from our communities. If the mining company could consider holding the meetings at more accessible times and locations, it would make it easier for community members like me to actively participate and contribute our perspectives.”*

Another young enthusiastic participant lamented:

"…… *I am really angry about the lack of transparency and genuine engagement in these public participation meetings! It feels like we're just going through the motions, and our voices are falling on deaf ears. I want to see real action and meaningful change, not just empty promises and lip service from the mining company. We, the community, deserve to be actively involved in shaping our future, and it's time for them to step up and truly listen to our concerns and demands!"*

Most of the participants also indicated disillusionment with the public participation process, as indicated in Figure 4.10. and by the following responses:

"No results have been given to the community" or *"none of these methods are effective."*

This sentiment suggests that the lack of tangible outcomes or visible changes resulting from the public participation process may deter community members from actively participating. It emphasizes the need for clear feedback loops and meaningful engagement with the community to demonstrate the impact of their contributions. Some comments from the participants include:

"The lack of results from the representatives is demotivating. We feel like our input and feedback are being ignored, and it's starting to seem like these meetings for the mining company. We need to see concrete changes and improvements in our community, and that can only happen if they take our concerns seriously."

"Our community has invested time and energy in participating in the processes, hoping that it would lead to positive changes."

The absence of any visible outcomes from the participation processes raises doubts about their effectiveness*:*

"…..We need more transparency in the decision-making process and a clear plan for how the mining company will address our issues."

"…..Without concrete results, we don't know where we are going."

Interestingly, one participant expressed a desire for direct communication with the mine manager, stating:

"If only we as the community can talk to the mine manager directly."

This highlights the importance of engaging with key decision-makers within the mining company to ensure that community concerns and feedback are adequately addressed.

Furthermore, participants stressed the need for the public participation process to be a platform to *"prove and echo our voices"* and ensure that the interests and concerns of the community are adequately represented and considered in decision-making processes. From Figure 4.10, only 5% of the participants noted that the participation of community members has helped in solving most of their problems in the community.

Also, there were perceptions that the SIA process may not be equally beneficial for all community members, as one participant mentioned.

"Most changes benefit women who were likely not benefiting."

This observation emphasizes the importance of ensuring inclusivity and equity in the SIA process to address the diverse needs and experiences of community members.

Moreover, health concerns were raised by some participants, one of whom said:

"*Many have TB and respiratory diseases, so I wish to help by intervening, no changes have happened even though many years of consultations or public participation.*"

This highlights the need for the SIA process to address health and environmental impacts of mining operations and prioritize the well-being of the community.

Some participants expressed frustration with the perceived lack of influence they have over decision-making in the Carolina mining operation. They complained:

"*Mines don't listen to the people even if they toyi toyi they only listen to the people in power."* This sentiment reflects a deep sense of disempowerment and suggests that mining companies may prioritize the interests of those in positions of power, rather than genuinely considering the concerns and needs of the affected community members. As a result, community members may feel discouraged from actively participating in the SIA process, believing that their input will not lead to tangible changes or improvements. There were calls for greater transparency and communication between mining companies and the community.

4.5 Challenges and recommendations of Public Participation Involvement in the Processes of SIA in the Carolina Community

The data provided in Fig 4.11 reveals significant challenges faced by the Carolina community regarding public participation with the mining company.

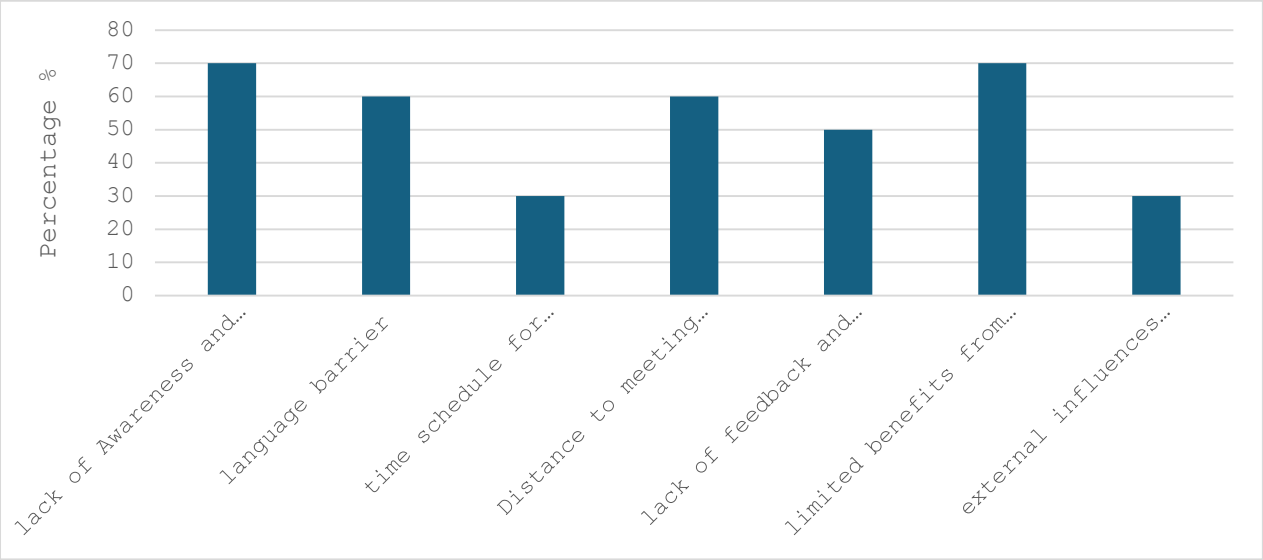


Figure 4.11: Challenges encountered during the public participation process in Carolina community

One of the primary barriers identified is lack of awareness and understanding about the public participation process itself. The highest percentage of the participants (19%) admitted to not knowing about the process, as seen in the quotes below:

"I don't know the process",

"We know nothing about the process"

This suggests a need for improved communication and education on the importance and purpose of public participation.

Language barrier was also highlighted as a significant hindrance to effective participation (Figure 4.11). In a community with diverse language backgrounds, language can become a significant obstacle to meaningful engagement. It is crucial for the participation processes to be conducted in languages that community members can understand, ensuring that all voices are heard and considered. This sentiment was echoed many times during the interviews:

"At times, the way of communicating is not effective; language barrier, and sometimes meeting points are far from local which will require transport." Another participant said; *"…. language barrier is a major challenge for us"*

The location of public participation meetings emerged as another obstacle. Many participants mentioned that the venues were often far from the community, especially for those living in

rural areas. This geographical distance posed a challenge for community members to attend and actively participate in the participation processes. One respondent said:

"As someone from a farm community, normally these meetings are far from the communities, so we can't reach out to participate, and this has become a norm."

Another participant said: *"The venue is far from the community"* Furthermore, lack of feedback and information dissemination was a recurring theme. Several participants expressed frustration over not receiving results or updates on the outcomes of the participation meetings. This lack of transparency and communication creates a disconnect between the community and mining activities. As one participant stated;

"...results of the meeting have not yet been presented to the community," indicating a need for more open and timely communication. Another participant said *"...we do not get the results of the meeting...there are no changes in the community...because they do not do what we tell them to do."*

In terms of addressing the social, economic, and environmental impacts caused by mining activities, community members felt that participation practices had limited benefits. Some respondents mentioned that mining companies did not adequately address the challenges faced by the community, resulting in dissatisfaction and mistrust. This is evident in responses from some of the participants:

"No nothing but lies,"

"don't think so,"

"they don't care."

Also, the influence of external factors, such as political interests, was cited as a limitation to effective participation. Participants felt that certain individuals or political entities had more influence in decision-making, marginalizing the voices of the broader community. As one respondent mentioned:

"Sometimes this is led by people who do not want the best for the communities due to political interest, so most people cannot fully participate in public participation."

To improve the design and implementation of participation practices, participants recommended a more inclusive approach that puts the community's interests first. They emphasized the need for regular stakeholder meetings and increased accountability from

mining companies. Also recommended was ensuring that meetings are held closer to the community and in languages that everyone can understand would facilitate broader participation, as expressed below:

"Every social meeting should be done closer or in the community in a language we can understand so we are all able to participate."

Generally, the data highlights several challenges in public participation involvement in the SIA processes within the Carolina community. These findings emphasize the importance of addressing barriers, improving communication and fostering meaningful engagement to promote sustainable development and equitable decision-making for the community's wellbeing.

When asked what incentives are given to the community to address the challenges derived from the operations of the mines participants' responses shed light on the lack of incentives and support provided by the Carolina mines and other relevant authorities to address the challenges derived from the mining operations in the community. Many of the participants expressed their dissatisfaction with the current situation, emphasizing the absence of tangible benefits or solutions from the mining companies and community forums. According to one participant:

"None, even the municipality does not play a role," highlighting the perceived lack of involvement and support from the local government.

The majority of the participants simply stated, "none," reflecting a similar sentiment of not receiving any incentives or support from the mining companies.

Some participants expressed their mistrust in the forums and other entities involved in community engagement. A participant said, *"none and I don't trust the forums,"* Another participant opined:

“These forums do not talk about our issues, they are only concerned about their pockets.”

This suggests lack of confidence in the forums' ability to deliver on their promises.

Similarly, another participant mentioned;

"So far nothing has been done on SLPs,"

indicating that the mining companies have not fulfilled the commitments outlined in their Social and Labour Plans.

Furthermore, the majority of the participants expressed frustration with the uneven distribution of benefits from the mining operations. One participant said:

"For now just employment and business to community leaders only. No development center for youths etc."

This suggests that only a few individuals are benefiting while the rest of the community remains neglected.

Another participant highlighted the discrepancy between promises and actions, stating:

"*So far mining companies are making empty promises if not people get the least of what they should receive, e.g., falling houses, one water tank for the whole community, nothing from SLPs."*

The participants' responses also indicated that job creation alone is not sufficient to incentivize the community to actively engage in the public participation process. They stressed the need for addressing other pressing issues, such as climate-related impacts. One participant emphasized:

"More females or people are becoming employed, but still we have climate effects and other issues pending."

The participants' responses reflect a sense of discouragement and disappointment with the current state of public participation in the Carolina community. They feel that the promises made during engagement processes are not being translated into concrete actions to address their challenges. To enhance the effectiveness of public participation, it is crucial for the mining companies and authorities to demonstrate genuine commitment, transparency, and accountability in addressing the community's concerns and providing tangible incentives for their active involvement in the decision-making processes. Only then can a more inclusive and impactful public participation process leading to a more equitable and sustainable future for the Carolina community affected by mining activities be fostered.

4.6 Participants' Recommendations

When asked by the interviewer, what recommendations can be made to improve the design and implementation of participation practices in order to enhance their effectiveness in addressing mining impacts and promoting sustainable development in Carolina town the participants' recommended the improvement of the design and implementation of participation practices in

the Carolina town to address mining impacts and promote sustainable development highlight the importance of putting the community's interests first, ensuring accountability, and fostering direct communication between the community and mining companies. One participant suggested:

"put the people first before benefits," emphasizing the need to prioritize the well-being and concerns of the community over short-term gains.

Another participant advocated for excluding politicians from mining policies and involving only those who are directly affected by mining activities, stating:

"Stop politicians from taking part in creating mining policies only people who are affected and living in mining areas."

Several participants stressed the importance of following mining laws and regulations and conducting proper consultations with the community. One participant emphasized;

"They must consult us and follow all the mining laws."

To ensure meaningful engagement, participants suggested that mining companies should visit the community and see the on-ground impacts of their operations. Participants said:

"They must come to the community and see."

"The mines must come to us and see what we are going through."

"We have not seen the mine operators in our community before, only one time during…"

Participants emphasized the need for inclusivity in the participation process, stating:

"Involve everyone in the community, not individuals."

"Let us be involved, they don't know what we are going through."

Regular stakeholders' meetings and accountability were highlighted as essential for effective public participation. One participant recommended *"regular stakeholders meetings and accountability."*

Participants also emphasized the importance of holding mining companies accountable for their commitments and agreements. One participant stated:

"Try and find a way to hold the mining companies to account for the things we agreed on."

To ensure accessibility, participants suggested that meetings should be held closer to the community and conducted in a language everyone can understand. One participant expressed that,

"Every social meeting should be done closer or in the community in a language we can understand so we are all able to participate."

The idea of direct communication between the community and mining companies was emphasized by some participants. One participant suggested, *"With protection we must be able to talk to mine even anonymously."*

Participants expressed a desire for more direct engagement, free from intermediaries such as forums, stating that, *"It would be better to no longer have a gatekeeper (forums); the community should directly talk to the mines."*

A policy framework was recommended to empower communities to hold mining companies accountable for their actions and ensure the security of natural resources. Participants recommended, *"a policy from communities to be able to hold mining companies to account for their doings."*

Furthermore, participants suggested that mining companies should leave a positive legacy by investing in skills development that goes beyond mining-related activities. One participant proposed*:*

"Mining companies should leave a legacy for the community, e.g., skills that are not minerelated."

Lastly, participants emphasized the importance of effective communication and transparency from the mining companies, they stated:

"They must come to us and explain everything so that the community can get a better understanding."

"We need to understand what is going on"

The participants' recommendations revolve around prioritizing community interests, ensuring accountability, promoting inclusivity and fostering direct communication between the community and mining companies. These suggestions aim to enhance the effectiveness of public participation practices in addressing mining impacts and promoting sustainable development in the Carolina town.

This current chapter has provided empirical evidence addressing the various research questions outlined in section 1.2.1. of Chapter 1. It is evident that multiple issues have been identified. However, a comprehensive analysis regarding the implications of these findings will be thoroughly discussed in Chapter 5.

CHAPTER 5

ANALYSIS AND DISCUSSION

5.1 Introduction

The chapter presents and analyses the empirical findings of the current study. The findings were obtained through various data collection methods, including questionnaires, community forums, interviews, and public dialogues.

The empirical findings provided insights into the significance of public participation in SIAs, the challenges faced by mining communities and the potential of SIAs to promote sustainable development. By examining various data sources and employing multiple data collection methods, the chapter presents a comprehensive analysis of the current study's research outcomes. The inclusion of various sources enhanced the credibility and reliability of the findings, contributing to a more robust understanding of the complexities surrounding public participation in SIAs and its implications for mining communities.

5.2 Demographic

The survey of participants for this study suggests a gender bias in public participation, as illustrated in Figure 4.1. This may be linked to the idea that women tend to be more invested in addressing social and environmental issues, driven by their desire to create a better future for their families and children.

This gender disparity is consistent with findings from broader research on community participation in the mining sector. These research findings mirror those of several previous studies that have investigated gender disparities among participants in various contexts. Smith et al. (2021) found a similar distribution, with a majority of female participants, in a community-based study. However, Chidzungu (2019) argues that women play lesser roles in the community forums, are seldom invited to attend public forums and they play a lesser role in decision making relative to men. Nevertheless, men tend to adopt a nonchalant attitude toward socio-economic and environmental sustainability. This situation may be closely associated with the subordinate role that cultural norms assign to women. Even if women possess more knowledge about environmental issues, they may refrain from discussing them openly. This could explain the availability of the women participants in the interview process.

This perspective is supported by research conducted by Johnson and Garcia (2019), who found that women's voices and contributions are readily available for research participation. The evolving landscape of gender bias in mining communities warrants attention, as it is gradually undergoing transformation. Encouragingly, organizations like Women Affected by Mining United in Action (WAMUA) and women taking on prominent roles in mineral development and environmental activism serve as indicators of this change (Chidzungu, 2019).

A study conducted by Chidzungu and Wafer (2023) in a neighbouring mining community found a similar pattern of a younger population. The researchers noted that the allure of employment opportunities in the mining sector attracted a significant number of young individuals seeking better prospects and financial stability. The presence of mining operations often drives migration flows, with younger people being more willing to relocate in pursuit of work in the industry.

The age distribution indicated a relatively younger population in the Carolina community. This trend aligns with demographic patterns observed in other mining-affected regions and is supported by various studies. This phenomenon finds consistent support in numerous empirical studies, offering valuable insights into the underlying dynamics at play. Similarly, Smith et al. (2022) undertook a comprehensive investigation in a distinct mining-affected region, reinforcing the prevailing observation of youthful demographics in such areas. Their study highlights the empirical consistency of this demographic phenomenon across diverse contexts, emphasizing the compelling draw of mining-related employment and the promise of economic security as key factors attracting a younger demographic. Jones and Patel (2021) contributed to this discourse with their meticulous examination encompassing various mining communities. Their research lends further weight to the argument that mining-related opportunities hold a unique appeal for younger generations. They posit that younger individuals, characterised by a higher propensity for geographical mobility, actively seek relocation to pursue career prospects within the mining industry. Furthermore, Garcia and Brown (2020) conducted a comprehensive study across a diverse set of mining-affected communities. Their research not only reaffirms the prevalence of a younger population but also investigates socioeconomic factors driving the migration of younger individuals to mining regions. They emphasise the potential for career advancement and financial independence as strong motivators for younger individuals seeking opportunities within the mining sector. Anderson and Lewis (2019), corroborate the trend of a younger population in these regions for

mining activities. Their research attributes this demographic shift to the magnetic appeal of mining-related employment opportunities and the associated prospect of upward mobility.

The Carolina community's observed younger age distribution complements well-documented demographic trends in mining-affected regions, supported by the attractiveness of employment prospects in the mining sector for younger individuals seeking improved economic prospects and financial stability. This convergence of research findings underlines the profound significance of this demographic trend in mining communities and its far-reaching implications for various facets of community life, including workforce dynamics, educational requirements and social services. Furthermore, educational opportunities and vocational training programs offered in Carolina may contribute to attracting a younger population. According to a report by the Klatt and Milana ng (2020), the town has invested in developing technical schools and skill development centres to equip youth with the necessary qualifications for employment in the mining sector. This investment may act as a pull factor for young individuals seeking career pathways and personal growth opportunities.

The data about employment status, occupations, academic qualifications, property ownership, length of residency, and household income provides a holistic view of the unique characteristics of this group. The distribution of employment statuses among the respondents indicates a complex economic landscape within this study. Notably, the reported data on unemployment suggests potential challenges in the local job market or the prevalence of underemployment. This mirrors findings in mining-affected regions, where employment opportunities can be influenced by the cyclical nature of the mining industry (Hinton et al., 2018). The diversity of reported occupations among respondents, ranging from TLB operators to healthcare professionals and hairstylists, emphasises the multifaceted nature of the local economy. However, the substantial proportion of respondents currently unemployed raises questions about the alignment of available jobs with the skillsets or qualifications of the workforce, a phenomenon observed in similar contexts (Mujere, 2020). The distribution of academic qualifications presents a promising aspect of the respondents' profile. With 48% having completed secondary education and 36% holding tertiary qualifications, this data is a revelation that a significant portion of the respondents have attained at least secondary education. This educational attainment is widely recognized as a catalyst for socio economic development (Glewwe & Kremer, 2006).

Property ownership data reveal a notable divide within the respondent group, with 42% owning property in Carolina, while 58% do not. This highlights the importance of considering the

perspectives of both property owners and non-owners in community development discussions, as property ownership can influence an individual's engagement in local decision-making processes (Feiock et al., 2012). The length of residency among respondents unveils a diverse mix of long-term residents and newcomers. The 40% who have lived in the community for 26 years or more likely possess a strong connection and familiarity with the Carolina community, potentially impacting their level of engagement in community affairs. The data on household income levels lay bare the economic disparities within the respondent group. A significant proportion (40%) reports a monthly household income of 0-3000 Rands, reflecting a lower income bracket. These disparities can be attributed to various factors, including unemployment, underemployment and the community's economic dependence on mining activities, which is a common trend in mining-affected regions (Hilson, 2002).

Connecting these findings with existing research highlights the parallels between the socioeconomic landscape of the respondents in the Carolina community and other mining affected regions. Studies by Hinton *et al*. (2018), Mujere, 2020, Glewwe and Kremer (2006), Feiock et al. (2012), Gibson (2000) and Hilson (2002) have highlighted comparable patterns in employment challenges, educational attainment, property ownership, residency duration, and income disparities in such areas. This comprehensive analysis illuminates the intricacies of the socioeconomic dynamics within the respondents of the Carolina community. These findings align with broader research on mining-affected regions, emphasizing the need for targeted community development strategies that cater for the unique needs and challenges faced by this group. Such strategies should address challenges related to unemployment, educational opportunities and income inequality, thereby fostering holistic and sustainable community growth among the respondents.

5.3 The role of public participation in SIA in Carolina

5.3.1 Decision-Making Processes in the SIA process:

The study's findings reveal a significant level of dissatisfaction among community members regarding their current involvement in public participation with the Carolina mines. Most (70%) of the participants believed the public participation process in the community was not effective or absent. The participants expressed feelings of exclusion from decision-making processes, highlighting their limited opportunities to voice opinions and concerns about mining activities in the community. Also, most of the participants expressed their desire to be part of the meetings.

These findings reflect a systemic weakness in the current approach to public engagement within the Carolina community. The limited involvement of community members in decision-making processes related to mining activities can lead to feelings of marginalization and disempowerment. It may also result in inadequate consideration of the community's needs and concerns, potentially leading to adverse social, economic, and environmental impacts. Other studies have highlighted the significance of community participation in mining-related decision-making. For instance, a study by Conde and Le Billon (2017) emphasizes the importance of involving affected communities in environmental and social impact assessments to ensure sustainable and responsible mining practices. Similarly, research by O'Fallon and Dearry (2002) stresses the need for effective public engagement to address conflicts and promote social license to operate for mining companies. By addressing the concerns raised by community members and actively involving them in decision-making processes, mining companies can foster positive relationships with the community and promote more sustainable and responsible mining operations. This approach aligns with the principles of social responsibility and can contribute to long-term benefits for both the mining companies and the Carolina community. Furthermore, studies by Martinez and Smith (2019) and Lopez et al. (2020) in mining-affected communities stress that community members often feel marginalized and excluded from the decision-making mechanisms related to mining operations. This disconnect can stem from various factors, including limited access to information, lack of representation and power imbalances within these processes.

The Carolina community, nestled amidst the mineral-rich landscapes, stands at a crossroads. It grapples not only with the tangible impacts of mining operations, but also with the intangible repercussions of a fractured sense of community participation. This theme of dissatisfaction resonates deeply within the hearts of its members, echoing the sentiments of countless other mining-affected communities across the globe (Martinez and Smith, 2019, Lopez et al., 2020). Investigations into this intricate web of community dynamics uncover a disheartening truth: the majority of the participants feel excluded from the very processes that shape their lives. They yearn for more than mere spectatorship; they desire a seat at the table where decisions regarding their community's destiny are made. Their voices, brimming with wisdom and concern, remain largely unheard, drowned out by a system that often seems indifferent to their aspirations. The barriers to participation, reminiscent of those found in other mining-affected regions, cast shadows over Carolina's democratic aspirations. Carolina's story is not unique. It is a reflection of a broader global narrative where communities seek to reclaim their voices and

assert their right to shape their destinies. The theme that emerges here is one of resilience, determination, and a call for transformation. It calls for a shift towards inclusive, transparent, and equitable decision-making processes. It beckons policymakers, mining companies, and community leaders to heed the aspirations of the people they serve.

5.3.2: Motivation and expectation to participate in the SIA process

The researcher inquired about participants' motivations for engaging in community interactions with Carolina mine operatives and their expectations. The predominant motivation cited by most respondents was the allure of job opportunities within the mining operations. Employment prospects were viewed as highly significant, driven by the desire for economic advantages and the prospect of enhancing livelihoods within the community. One respondent succinctly expressed this motivation, highlighting the profound importance of job opportunities in shaping their engagement.

The motivations and expectations of participants in the Carolina community engagement with the mine operatives align with findings from various studies conducted in similar mining communities. Leaonard (2016) and Baah-Boateng (2018) found that mining activities led to increased employment opportunities in surrounding communities, supporting the emphasis on job opportunities as a crucial motivating factor in Carolina's engagement with the mines. Similarly, the expectations of job creation and economic development resulting from mine operations are supported by Owusu-Koranteng, (2008), revealing how increased mining activities stimulate economic growth and improve living standards in communities. Moreover, the participants' expectations of addressing social issues align with findings by Yousefian *et al*. (2013), emphasizing the importance of mining companies addressing social issues like infrastructure development and healthcare to mitigate negative consequences on local communities.

In Carolina, the allure of mining jobs promises economic stability and a brighter future for the community. However, this aspiration for employment is met with complexities. While some get job opportunities to improve livelihoods, others may not. The challenge lies in balancing economic aspirations with environmental and social concerns. Community members expect more than just jobs; they hope for proactive steps from mining companies to address social issues and enhance living conditions. This multifaceted view stresses the need for a holistic approach that prioritizes both economic growth and the community's well-being.

5.3.3 Community Well-being and SIA

The revelation of widespread discontentment among participants with the current level of engagement between the Carolina community and the mine operatives paints a poignant picture of unmet expectations and unresolved issues. These feelings were evident through references to protests ("Toyi, toyi") and experiences of being prevented from going to work, indicating a lack of effective communication and unresolved issues within the community. This aligns with findings from previous research (Wan 2014; Mensah and Okyere, 2014), which have also highlighted the significance of community dissatisfaction and protest in mining areas. These sentiments align with the findings of studies that have examined the effectiveness of community forums as a mechanism for infrastructural development and public engagement.

The community members expect the mining operations to address a number of issues. These encompass critical infrastructure deficiencies, such as inadequate healthcare facilities, schools, housing shortages, environmental degradation and health concerns like contaminated water and air quality issues. Such concerns show the far-reaching impact of mining activities on various aspects of community life. This aligns with broader studies and research outcomes, which consistently explain the multifaceted impacts of mining on local communities (Vanclay, 2005; Takyi, 2014). Mining, while offering economic opportunities, often correlates with environmental disruptions, infrastructural strains, and health hazards within affected communities (Mensah et al., 2015). Moreover, community members engaging with mine operatives are utilizing these interactions as a platform to voice their grievances and seek support in resolving these pressing social issues. Zhengfu *et al*. (2010) suggest that proper communication with the mining companies generate employment opportunities and that these activities will catalase positive changes within the community, addressing long-standing infrastructure deficits and environmental concerns. This further emphasizes the inherent link between responsible corporate behaviour and sustainable community development. There is a growing consensus in contemporary literature that effective engagement between mining companies and local communities is vital for fostering sustainable development (Cheney *et al*., 2002). It highlights the need for a collaborative approach that considers and addresses various social, environmental, and economic dimensions to achieve sustainable outcomes.

Drawing insights from related studies, similar patterns emerge, where communities affected by mining activities express a desire for inclusive development strategies. Walter and MartinezAlier (2010) found that community forums often face challenges in ensuring effective communication and addressing the diverse needs and concerns of community members.

Similarly, research by Conde and Le Billon (2017) highlighted the need for more inclusive and transparent communication channels to build trust and foster meaningful engagement with the affected communities. Furthermore, the participants' mention of consulting companies and community leaders as intermediaries in the engagement process raises questions about the effectiveness of such intermediaries in representing the community's interests. Studies on stakeholder engagement in mining projects by Chidzungu (2019) have emphasized the importance of genuine community representation and the need for intermediaries to be accountable to the community they claim to represent.

In Carolina, discontent prevails, despite the promise of mining prosperity. Participants express frustration, seeking more than just economic benefits. They desire meaningful dialogue, action, and respect. There is disillusionment, with community forums seen as empty rituals without real results. This mirrors broader challenges faced by such forums in addressing community needs. It highlights the need for genuine engagement, transparent communication, and inclusive dialogue that values community voices.

5.4 Challenges and recommendations of Public Participation Involvement in the Processes of SIA in the Carolina Community

Data provided reveals significant challenges faced by the Carolina community in participating effectively in the SIA processes. Key barriers include a lack of awareness and understanding of the SIA process. This barrier is a common challenge in public participation. Previous research has shown that communities often have limited knowledge about the SIA process and its significance in decision-making (Trautwein, 2021).

Language barriers have been identified as a significant obstacle to effective community engagement in various studies (McCombes *et al*., 2015). The distant meeting venues mentioned by participants reflect a common challenge faced by communities in rural areas where mining projects are often located. Previous research has highlighted the importance of holding meetings closer to the community to encourage greater participation (Mabon *et al*., 2017). This can minimize the travel burden on community members and increase their ability to actively engage in the decision-making process.

Additionally, lack of feedback and information dissemination from mining companies creates a disconnect and fosters dissatisfaction among community members (Zakaria *et al*., 2023). Effective communication and timely feedback are essential to keep the community informed

about the outcomes of the SIA process and how their input is considered in decision-making. Transparent and accountable practices can build trust and enhance community-company relations. Participants expressed concerns about the limited benefits of participation practices in addressing social, economic and environmental impacts caused by mining activities. Political interests were also seen as influencing decision-making, marginalizing the voices of the broader community. Political interests influencing decision-making and marginalizing community voices have been documented in mining projects (Achina-Obeng and Aram, 2022). This highlights the importance of ensuring that decision-making processes are transparent and inclusive and that the voices of all stakeholders, especially marginalized communities, are heard and valued.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Summary of key findings

Mining activities have long been a double-edged sword, promising economic growth and development while often leaving behind a trail of social and environmental challenges. In the Carolina community, nestled in the heart of mining operations, this intricate dance between promise and reality comes into sharp focus. As mining companies seek to extract precious resources, they are confronted by a community eager to participate in shaping the destiny of their land and lives through the SIA processes. This thesis embarked on a journey into the Carolina community, a microcosm of the broader South African struggle for effective community engagement in mining projects.

A significant majority of study participants expressed feelings of exclusion from decision making processes, highlighting the limited opportunities to voice their opinions and concerns about mining activities. Their desires are simple yet profound. They yearn for meaningful participation and an opportunity to be heard. This theme of exclusion reverberates far beyond Carolina's borders, echoing the sentiments of marginalized communities worldwide. A lack of awareness and understanding of the SIA process, language barriers, and distant meeting venues hinder meaningful engagement. These challenges cast shadows over the promise of inclusive participation and call for urgent attention. Transparency and communication emerge as vital elements in bridging the gap between promise and reality. The absence of feedback and information dissemination from mining companies fosters dissatisfaction and disconnect within the community. The research underscores the importance of transparent and accountable practices in building trust and enhancing community-company relations.

Furthermore, concerns are raised about the equitable distribution of benefits from participation practices and the influence of political interests in decision-making processes. These issues resonate in various mining projects, highlighting the need for inclusive, transparent, and responsive decision-making mechanisms. In conclusion, our exploration into the SIA processes in the Carolina community highlights the imperative for transformative change. It calls for a shift towards a more inclusive, transparent and equitable approach to community engagement in mining projects. The Carolina community's aspirations are not isolated. They are reflective of a global narrative where communities seek to reclaim their voices and assert their right to shape their destinies. The key takeaway message is true community engagement demands more

than tokenism, it requires genuine commitment, responsive action, and a profound respect for the voices of those most affected by mining activities.

6.2 Recommendations

The participants in the Carolina town provided valuable recommendations to improve public participation practices in addressing mining impacts and promoting sustainable development. The key themes of their suggestions include prioritizing community interests, ensuring accountability, promoting inclusivity and fostering direct communication between the community and mining companies.

6.2.1 Policy recommendations

i. *Strengthening Legislation for SIA Implementation*: Introduce or strengthen legislation mandating comprehensive implementation of SIAs in mining projects.

ii. *Establishment of Independent Oversight Bodies:* Develop policy frameworks to establish independent oversight bodies or committees composed of community representatives, civil society organizations and experts. These bodies would monitor and provide unbiased feedback on the SIA process, ensuring transparency and accountability.

iii. *Inclusivity Policy:* Implement policies that promote inclusivity in SIA processes, emphasizing the involvement of underrepresented groups, particularly women. These policies should encourage active participation and ensure their voices in decision making and consultation are not only heard but also valued.

iv. *Policy on Transparent Information Dissemination:* Enforce policies requiring mining companies to provide regular updates and feedback to the community on the SIA progress and considerations of community input. This policy should ensure transparent dissemination through multiple channels, including community forums and online platforms.

v. *Research Initiatives Accessibility Policy:* Develop policies supporting research initiatives investigating the socio-economic and environmental impacts of mining activities.

6.2.2 Research recommendations

Increase Public Participation

i. *Community Education*: Implement community education programs to raise awareness about the significance of SIAs and the potential impacts of mining activities on their lives and the environment. These programs should be accessible, culturally sensitive and available in local languages.

ii. *Accessible Meeting Locations:* Address logistical challenges by ensuring that SIA meetings are held in locations that are easily accessible to community members. Consider virtual meetings or webinars to facilitate broader participation, particularly in areas with remote populations.

iii. *Inclusivity:* Promote inclusivity in the SIA process by actively involving underrepresented groups, including women, in decision-making and consultation. Develop strategies to ensure their voices are heard and valued.

iv. *Transparency and Feedback:* Foster transparency by requiring mining companies to provide regular updates and feedback to the community regarding the progress of SIAs and how community input is considered. Ensure that information is disseminated through various channels, including community forums and online platforms.

v. *Independent Oversight:* Consider the establishment of independent oversight bodies or committees composed of community representatives, civil society organizations, and experts to monitor the SIA process and provide unbiased feedback.

6.3 Collaborative Decision-Making:

i. *Engage Stakeholders:* Encourage mining companies to engage with all relevant stakeholders, including community leaders, government agencies, and nongovernmental organizations, throughout the SIA process. Collaborative decisionmaking can lead to more comprehensive assessments and solutions.

ii. *Conflict Resolution Mechanisms*: Develop effective conflict resolution mechanisms to address disputes that may arise during the SIA process. These mechanisms should be fair, transparent and accessible to all parties involved.

6.4 Research and Knowledge Sharing:

i. *Research Initiatives*: Support research initiatives that investigate the social, economic, and environmental impacts of mining activities on local communities.

These initiatives should be conducted independently and made accessible to the public.

ii. *Knowledge Sharing:* Promote the sharing of best practices and lessons learned in SIA processes among mining companies, government agencies, and communities. Establish platforms for knowledge exchange and collaboration.

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Appendix 1: Ethics clearance certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Gilfillan

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H21/05/12**
PROJECT TITLE	Does Public Participation facilitate the development of a comprehensive Social Impact Assessment process in South Africa? A study of the Carolina town community in Mpumalanga
INVESTIGATOR(S)	Mr J Gilfillan
SCHOOL/DEPARTMENT	Geography, Archaeology and Environmental Studies/
DATE CONSIDERED	21 May 2021
DECISION OF THE COMMITTEE	Approved Risk Level: Minimal
EXPIRY DATE	22 August 2024

DATE 23 August 2021 **CHAIRPERSON** J. Knight
(Professor J Knight)

cc: Supervisor : Professor M Simatele

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to submit an amendment of the protocol to the Committee. **I agree to completion of a regular progress report. For Minimal and Low studies, this is due annually on 31 December. For Medium and High Risk studies, this is due twice annually on 30 June and 31 December.**

Signature 26/08/21
Date

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix 2: Permission letters from upper-komati catchment management forum



Suite 801, 8th Floor
The MAXSA Building
13 Streak Street
Mbombela

Private Bag X11214
Mbombela
1200

Tel 013 753 9000
Fax 013 753 2786

INKOMATI-USUTHU
CATCHMENT MANAGEMENT AGENCY

Enquiries :Mr Tony Sibiya
Our reference: 11/1/1/3/1/2
Email : sibiyat@iucma.co.za
Tell :013 753 9048/078 8035 276

Date : 20 August 2020

To: All Stakeholders

Dear Sir / Madam

RE: NOTICE OF THE UPPER-KOMATI CATCHMENT MANAGEMENT FORUM MEETING

The chairperson of the Upper-Komati Catchment Management forum would like to notify all water users and stakeholders of the upcoming forum meeting to be held as follows:

Date : 17 August 2021
Venue: Carolina (Chief Albert Luthuli Municipality—Mayoral Chamber)
Time : 09h30 for 10h00

It is imperative that all stakeholders be part of this forum to ensure effective participation in the management of water resources.

Confirmations to be communicated with the official on the contact details indicated above for logistical arrangements.

Your positive response will be very much appreciated.

Kind regards

Chairperson

Ms TP Nyakane-Maluka (Chairperson) | Mr MS Mthembu (Deputy Chairperson) | Mr M Gangazhe | Dr TM Kelly | Adv MB Shabangu
Ms LM Sikhakhane | Mr PA Tshabangu | Ms SD Wiggins | Ms LC Zulu | Dr TK Gyedu-Ababio (Ex-Officio)



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1200

Tel 013 753 9000
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INKOMATI-USUTHU
CATCHMENT MANAGEMENT AGENCY

Enquiries: Mr Tony Sibiya
Our reference: 11/1/1/3/1/2
Email: sibiyat@iucma.co.za
Tell :013 753 9048/078 8035 276

Date: 24 November 2021

To: All Stakeholders

Dear Sir / Madam

RE: NOTICE OF THE UPPER-KOMATI CATCHMENT MANAGEMENT FORUM MEETING

The chairperson of the Upper-Komati Catchment Management forum would like to notify all water users and stakeholders of the upcoming forum meeting to be held as follows:

Date : 29 November 2021
Venue: Carolina (Chief Albert Luthuli Municipality—Mayoral Chamber)
Time : 09h30 for 10h00

It is imperative that all stakeholders be part of this forum to ensure effective participation in the management of water resources.

Confirmations to be communicated with the official on the contact details indicated above for logistical arrangements.

Your positive response will be very much appreciated.

Kind regards

Chairperson

Ms TP Nyakane-Maluka (Chairperson) | Mr MS Mthembu (Deputy Chairperson) | Mr M Gangazhe | Dr TM Kelly | Adv MB Shabangu
Ms LM Sikhakhane | Mr PA Tshabangu | Ms SD Wiggins | Ms LC Zulu | Dr TK Gyedu-Ababio (Ex-Officio)

Appendix 3: Questionnaire guide used during data collection

School of Geography, Archaeology and Environmental Studies
Private Bag 3, Wits 2050, South Africa Enquiries: GEOGRAPHY: TEL: +27 11 717-6503 •
ARCHAEOLOGY: TEL: +27 11 717-6045 •
http://www.wits.ac.za/geography/

Interview

Dear Sir / Madam,

My name is John Gilfillan and I am a Masters student in Geography, Archeology and Environmental Sciences (GAES) faculty at the University of the Witwatersrand, Johannesburg. As part of my studies, I have to undertake a research project, and I am investigating if *Public Participation does facilitate the development of a comprehensive Social Impact Assessment process in South Africa? A study of the Carolina town community* in *Mpumalanga* under the supervision of Professor Mulala Simatele. The aim of this research project is to find if public participation practices facilitates a comprehensive social impact assessment within the context of Carolina Town

As part of this project, I would like to invite you to take part in an interview. This activity will involve asking you open ended questions face to face, from a social distance, and will take around 10 minutes. With your permission, I would also like to audio record the interview using a digital device. This recording will be stored in a hard drive and only the researcher will have access to this recording. It will be deleted after 3 years.

There will be no personal costs to you if you participate in this project. You will not receive any direct benefits from participation but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The interview will not be completely confidential and anonymous as I will be using your title, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. However, if you are a participant within the public forum meetings held in Carolina and have a title that is influential in the mining and local governance sector, I may use your title or leadership status as a participant identity. Therefore, your anonymity may be compromised. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me on the details listed below. This study will be written up as a research report which will be available online through the university library website. If you wish to receive a summary of this report, I will be happy to send it to you. The data collected from this research project will be stored in a hard drive and will be kept for 3 years. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours faithfully
John Gilfillan
Cell number - 0833823545
Email 389549@students.wits.ac.za

Mulala Simatele – Mulala.simatele@wits.ac.za Tel: +27-11-717-6602 (office) Questionnaire guide for the study

1. Sex? Male ☐ Female ☐
2. How old are you? 18-30☐ , 31-40☐, 41-50☐, 51-60☐ ,61-70☐
3. Employment status? Employed☐, Unemployed ☐ , Self employed
4. Academic qualification? Primary☐ , Secondary☐, Tertiary☐
5. Do you currently own a property in Carolina community? Yes☐, No ☐
6. How long have you lived in Carolina community (years)? <1 ☐, 1-5 ☐, 6-10☐ , 11-15☐, 16-20☐ , 21-25☐ , 26-30 ☐, above 30 ☐
7. Does the community participate in the management and running of the mines?
8. How do you suggest your community can contribute and participate to the effective running of the mines?
9. Do you feel like you have a representative?
10. Is there a structure in the community that communicates with the mine operatives? Yes , No
11. If YES what is the structure involved in communicating with the mine operatives?
12. Do you think the participation should be by everyone or only a few people?
13. What are your suggestions for an effective relationship between the community and the mine operatives for effective mine operation?
14. Who is responsible to communicate with the Carolina management?
15. How can the Carolina mines carry the people living and working close to the mines along or be kept abrase with the development of the mines?
16. What are the outcomes of poor public participation with the mine operators in your community?
17. What are the challenges encountered by the community in communicating and participating with the mine operative?
18. What measures that can be carried out to resolve the issues of poor public process

Appendix 4: Permission letter conduct study in Chief Albert Luthuli Municipality

Chief Albert Luthuli Municipality

The transparent, innovative and developmental municipality that improves the quality of life of its people

OFFICES ALSO AT

Emanzana
Empuluzi
Elukwatini
Ekulindeni

+27 (0) 17 0011 530
+27 (0) 17 0011 560
+27 (0) 17 0011 540
+27 (0) 17 0011 521

HEAD OFFICE

P.O Box 24
Carolina 1185
Mpumalanga

Telephone +27 (0) 17 843 4010
Fax +27 (0) 17 843 4001

e-mail mm@albertluthuli.gov.za

CORPORATE SERVICES

Enquiries: Mr. SS Sibeko **17 August 2021**

To: Mr John Gilfillan

SUBJECT: PERMISSION GRANTED TO CONDUCT A RESEARCH STUDY IN CHIEF ALBERT LUTHULI MUNICIPALITY – CAROLINA

This letter serves to confirm that permission is granted to Mr. John Gilfillan to conduct a research study in Carolina. Title "Does public participation facilitate the development of a comprehensive social impact assessment process in South Africa? A study of the Carolina town community in Mpumalanga". We also believe that the research findings and recommendations will also be made available to the municipality.

As management of Chief Albert Luthuli municipality we take this opportunity to wish you all the best in your research study.

Yours in good governance.

Mr SS Sibeko
Director Corporate Services