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FACULTY OF SCIENCE AND ENGINEERING
DEPARTMENT OF SUSTAINABLE DEVELOPMENT



**THE IMPACTS OF ARTISANAL MINING IN IMPROVING LIVELIHOODS OF
COMMUNITIES: THE CASE OF MUKARADZI COMMUNITY, MT DARWIN DISTRICT
ZIMBABWE.**

BY

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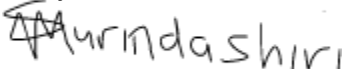
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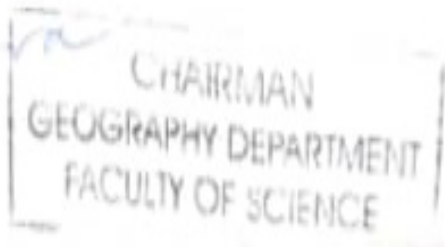
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DECLARATION

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Signature.....*Samukeliso Sharon Murindashiri* Date.....

DEDICATION

This work is dedicated to my loving mother Sibongile Nzombe and my little sister Nashe as well as my friends and relatives who gave me support during this research.

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I would like to express my heartfelt gratitude and admiration to the following people for their valuable and helpful contributions to making this research endeavour a success:

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ABSTRACT

Communities rely heavily on artisanal mining for their livelihoods, especially in resource-rich areas like Mukaradzi in Zimbabwe's Mount Darwin District. This study investigates how artisanal mining affects the Mukaradzi community's ability to improve their standard of living. Through qualitative research methods including interviews and observations, it was found that artisanal mining has provided employment opportunities, income generation, and economic empowerment for community members. Additionally, artisanal mining has led to infrastructure development and improved access to basic services such as healthcare and education. However, challenges such as environmental degradation, health and safety risks, and lack of formalization persist. Overall, artisanal mining in Mukaradzi has positively impacted the livelihoods of community members, but sustainable practices and regulatory frameworks are necessary to maximize these benefits while minimizing negative consequences.

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ACRONYMS

UNEP United Nations Environment Programme

SMEs small and medium enterprises

NGOs Non Governmental Organizations

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CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

The global economy has traditionally benefited greatly from mining, and in Zimbabwe's Mt Darwin district, it plays a critical role in the local economy. While research has explored the political economy of mining in the area, highlighting conflicts over land and resources, there is a significant knowledge gap regarding the effect of artisanal mining in Mount Darwin on local livelihoods and the alleviation of poverty. Previous studies have primarily focused on the geological and natural science aspects of artisanal mining, driven by commercial interests, with limited documentation and publication. This new study seeks to investigate how artisanal mining can positively impact community livelihoods, with the aim of informing government regulations in Zimbabwe, Africa, and beyond to address related challenges. Both large-scale and small-scale mining operations have the potential to improve livelihoods by providing employment opportunities to local communities near mining sites, making this research crucial for sustainable development.

1.2 Background of the study

Mining has been a most concern activity for economy's growth Worldwide. It is an activity that involves digging of surface and subsurface for the purpose of exploiting and processing the minerals for various uses (*UNEP, 2009*). Mining can be legal or illegal depending on the status of rights owned by the miners. For decades, mining has been regarded as one of the most significant economic activities in Africa where deposits assets are used beneficially for mankind. Artisanal mining has a historical presence dating back to the Munhumutapa Empire in the 15th century, involving the trade of gold between the Portuguese and Shona people (*Gutu, 2017*). Presently, small-scale miners in Zimbabwe are key producers of gold, chrome, tantalite, and semi-precious stones, with a significant majority, estimated at over 70 percent, engaged in gold production (*Gutu, 2017*). During the period from 2000 to 2008, the country faced hyperinflation leading to a severe economic recession, resulting in the

closure of numerous large companies and downsizing of operations (*Gutu, 2017*). This situation prompted many Zimbabweans to turn to small and medium enterprises (SMEs), including artisanal mining, as a means of livelihood (*Gutu, 2017*). The high levels of unemployment have driven individuals from various educational backgrounds and vulnerable groups to participate in artisanal mining. The combination of increasing mineral prices and challenges in earning a living from agriculture has fueled a rapid expansion in artisanal and small-scale mining (ASM), as highlighted in a recent report by the Intergovernmental Forum on Mining, Minerals, Metals, and Sustainable Development (*Morgane Fritz et al., 2018*). The study revealed that the number of individuals directly involved in ASM rose 7 million persons involved in industrial mining in 2013, there were an estimated 40.5 million in 2017, up from 30 million in 2014, 13 million in 1999, and 6 million in 1993 (*Morgane Fritz et al., 2018*). Currently, approximately 150 million individuals across 80 countries in the global south rely on ASM for their livelihoods (*Morgane Fritz et al., 2018*).

This study explores Mukaradzi community which is located in Mashonaland Central province, Mt Darwin covers approximately 6,000 square kilometres in north-eastern Zimbabwe (*Morgane Fritz et al., 2018*). Named after Charles Darwin, this district is notable for its significant artisanal mining operations, particularly in gold extraction (*Gutu, 2017*). Artisanal mining involves small-scale mining activities conducted by individuals or small groups using rudimentary tools and equipment (*Morgane Fritz et al., 2018*). In Mt Darwin, artisanal mining has become a vital economic pursuit, offering employment opportunities to many who lack access to formal jobs (*Gutu, 2017*). This sector enables individuals to generate income, support their families, and alleviate poverty within the community (*Gutu, 2017*).

The history of artisanal mining in Mt Darwin can be traced back to the colonial era in Zimbabwe. During this time, the British colonial government encouraged small-scale mining operations as a means of generating revenue and promoting economic development in the region. The discovery of gold deposits in Mt Darwin attracted many prospectors, both local and foreign, who engaged in small-scale mining activities. Initially, artisanal mining in Mt Darwin was completed with simple instruments like shovels, picks, and pans. Miners would manually extract gold-bearing ore from the ground and then crush and grind it to separate the gold

particles. This traditional method, known as panning, is still practised by some miners today. As time went on, artisanal mining in Mt Darwin expanded, with more people joining the sector in search of economic opportunities, the mining techniques and equipment used in Mt Darwin have evolved. The informal nature of artisanal mining allowed individuals and small groups to easily enter the industry without requiring large amounts of capital or formal training. Miners have adopted more mechanized methods, including the use of motorized pumps for water extraction and crushers and mills for ore processing. However, artisanal mining in Mt Darwin still largely remains a manual and labour-intensive activity. The growth of artisanal mining in Mt Darwin can be attributed to various factors. One of the main drivers is the lack of alternative employment opportunities in the district. Many individuals, especially those living in rural areas, turn to artisanal mining as a means of generating income and supporting their families. Additionally, the informal nature of artisanal mining attracts individuals who may not have access to formal employment due to factors such as limited education or skills. Artisanal mining provides a relatively low barrier to entry, allowing anyone with basic mining knowledge and tools to engage in the activity.

In many countries, mining is managed effectively to produce an overall positive impact, benefiting entire nations. However, some countries have experienced resource misuse, leading to conflict, poverty, political instability, and environmental damage (*Hilson, G. 2016*). Disputes over land use, property rights, revenue transparency, and corruption have fueled tensions within communities (*Shen, L, et al. 2006*). Nevertheless, mining significantly contributes to economic growth, improved living standards, and sustainable development through its long-term horizon, labour requirements, infrastructure links, and essential products (*Fisher, E, et al. 2009*). With proper management, the mining industry can alleviate poverty worldwide while preserving ecosystems. Artisanal and small-scale mining (ASM) of precious minerals is crucial, providing employment, supporting rural livelihoods, and contributing to national income through taxes, exports, and local industries. According to the World Bank, approximately 100 million people worldwide rely on ASM for their livelihood.

However, there are also challenges associated with this sector, including environmental degradation, health and safety risks, and social conflicts. Addressing these challenges and maximizing the positive impacts of artisanal mining while

mitigating the negative consequences is essential for promoting sustainable development in the district. Artisanal mining in Mt Darwin has a complex history and continues to be a significant economic activity in the district. While it provides livelihood opportunities for many individuals, there are also challenges that need to be addressed to ensure sustainable development and minimize the negative impacts on the environment and local communities. Therefore, this research will analyse the economic, social, and environmental dimensions of artisanal mining activities and their effects on local communities in this specific context. The findings of this study will provide valuable insights into the specific impacts of artisanal mining in the Mt Darwin District and can inform policy interventions and strategies to maximize the positive impacts of artisanal mining while mitigating the negative consequences. By addressing the challenges associated with artisanal mining in this district, policy-makers can promote responsible practices and harness the potential of this sector to contribute to poverty reduction and overall development outcomes in Mt Darwin District, Zimbabwe.

1.3 Problem statement

Artisanal mining in Mukaradzi Mt Darwin district has been touted as a potential pathway out of poverty for local communities, however its impacts on livelihoods remain poorly understood and potentially unsustainable. Mukaradzi mining area is on the verge of being closed down because of its illegality and dangers it poses to human life. The daily commodities in Mt Darwin relies on the mining and there are less and less sales in the market of Mt Darwin because of this closure thus affecting the livelihoods of the community. Cost of living is becoming more unbearable and the majority of Mt Darwin business entities and dwellers who are depending more on mining are being affected. Therefore this study seeks to explore the impacts of artisanal mining in improving livelihoods of communities a case of Mukaradzi in Mt Darwin District.

1.4 Aim of the study

This research seeks to examine the effects of artisanal mining on the living conditions and economic well-being of the Mukaradzi community in Mt Darwin District with the focus on understanding how this mining activity influences their

daily lives and livelihoods . Artisanal mining is a widespread practice in many developing countries, and its impacts on local communities are often a subject of concern. This study focuses specifically on the Mukaradzi community in Mt Darwin district, providing insights into the effects of artisanal mining on the livelihoods of this particular community. By examining this case, the study can provide valuable insights for policy makers and organizations working to enhance community well-being. Research on the particular effects of artisanal mining on the livelihoods of the Mukaradzi community and similar settings is scarce, highlighting a significant knowledge gap that needs to be addressed through further investigation and analysis. Thus, this study contributes to filling this knowledge gap by providing empirical evidence and insights into the relationship between artisanal mining and livelihood improvement in this particular community.

1.5 Research objectives

The Study sought:

1. To examine the extent on which artisanal mining has improved livelihoods at Mukaradzi community in Mt Darwin
2. To analyse the key challenges faced by artisanal miners in improving their livelihoods in Mukaradzi Community, Mt Darwin District.
3. To explore the dynamics surrounding the mineral exploitation in Mt Darwin and how it concurs with development
4. To come up with improved strategies or methods of helping artisanal miners in preserving their environment sustainably in Zimbabwe.

1.6 Research questions guiding the study

1. To what extent is artisanal mining improving livelihoods in Mukaradzi Community in Mt Darwin?
2. What are the key challenges faced by artisanal miners in improving livelihoods in Mukaradzi Community in Mt Darwin?
3. What are the dynamics surrounding the mineral exploitation in Mt Darwin?

4. What are the improved strategies that can be employed by miners to improve their livelihoods and at the same time preserving the environment sustainably?

1.7 Assumption of the study

The researcher assumed that:

Artisanal mining is improving livelihoods of communities in Mukaradzi community by preserving the environment or artisanal mining is not improving community livelihoods and at the same time destroying the environment.

1.8 Significant of the study

This study significance extends beyond the specific context of the Mukaradzi community. It has implications for various stakeholders involved in artisanal mining, and they can utilize the findings to inform their work and contribute to the overall understanding and improvement of livelihoods in artisanal mining communities. The completion of the study will help policy makers, planners, educationalists, researchers, academics and local authorities in coming up with measures and solution to achieve sustainable mining at Mukaradzi area in Mt Darwin district. This study exposes the fight against poverty in the rural and marginalized communities. Artisanal mining also helps the country's economy as the miners will be granted licenses by the Ministry responsible for mining whereby, they will be paying taxes and thereby boosting the economy. Significance of this study to;

1. Policy Makers

The study provides insight into the effectiveness of current policies and regulations around artisanal mining and could suggest ways to improve these policies. The study will also help with policy interventions that formalize small scale and illegal mining operations and stimulate gold deliveries through official channels and protect vulnerable populations ,the environment and insure sustainable mining practices. Policy-makers can develop regulations and policies based on the findings of this study in the Mukaradzi community. This can help ensure that community members are protected and that mining activities are carried out in a responsible and sustainable manner. Hundreds of thousands of artisanal miners in Zimbabwe will continue to have to risk their lives to make a living hence the study will propose ways

in which these practices are meant to be sustainable through management plans to cater for environmental consequences. Artisanal and small scale mining will help policy makers in coming up with policies to help and empower the miners as well as implementing policies which conserves the environment. For example, providing the miners with sustainable materials and equipment.

2. Planners

Planners can use the insights from this study to develop strategies and interventions that support responsible and sustainable artisanal mining practices. By designing policies and programs that promote responsible mining, planners can contribute to improving livelihoods in artisanal mining communities while preserving the environment. Also the research can provide information about the impact of artisanal mining on the environment and the community which could inform future planning decisions.

3. Educationalist

Educationalists can use the findings of this study to design curriculum and training programs that equip individuals with the necessary skills and knowledge to engage in artisanal mining activities in a way that improves their livelihoods. By incorporating the insights from this study into their teaching, educationalists can contribute to enhancing the capacity of individuals involved in artisanal mining. The study will also help miners with the knowledge about better mining methods which are sustainable to the environment.

4. Researchers

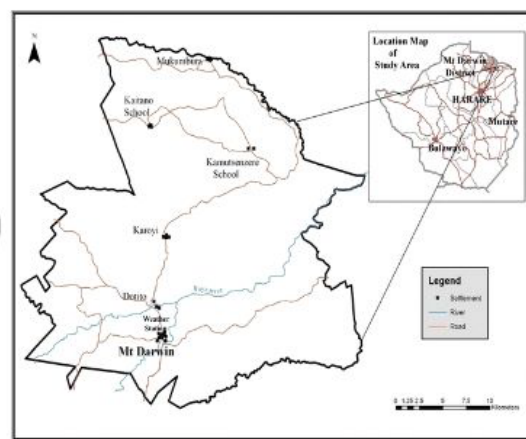
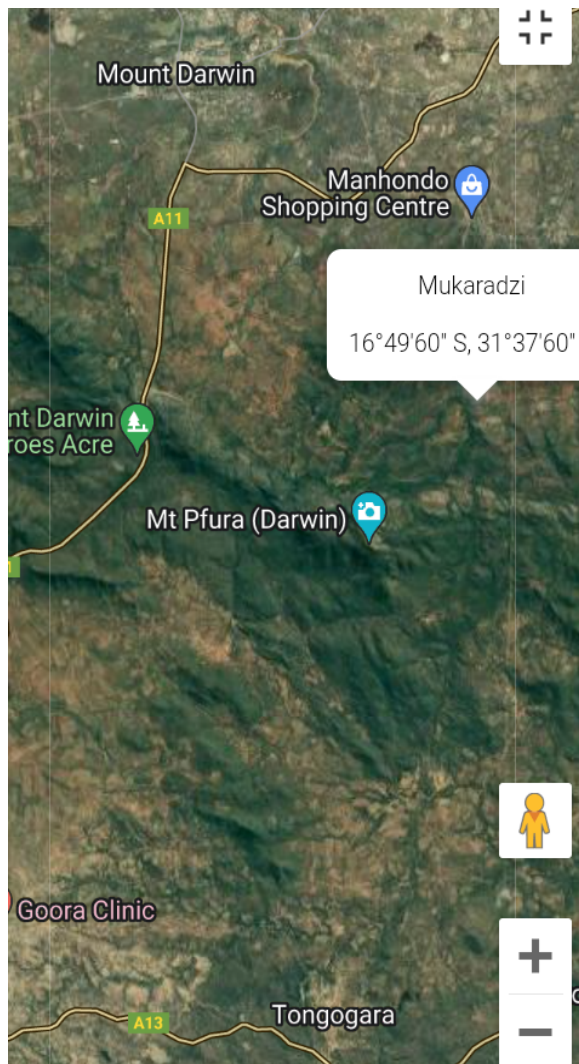
By investigating the effects of artisanal mining on the socio-economic well-being of the Mukaradzi community, this study provides valuable insights into the complex relationships between mining, poverty, and sustainable development, informing evidence-based policy decisions and interventions. Its findings encourage interdisciplinary collaborations, integrating perspectives from sociology, economics, environmental science, and policy studies, and align with global sustainability goals, making it a significant area of research for scholars and practitioners, ultimately contributing to more sustainable and equitable mining practices. Thus, researchers can build upon this study by conducting further research on similar communities or exploring different aspects of artisanal mining's impact on livelihoods.

5. Academics

Academicians can incorporate the findings of this study into their teaching, research, and publications. By enriching the academic discourse on artisanal mining and its effects on livelihoods, academicians can stimulate further discussions and debates, ultimately contributing to the development of more effective policies and interventions.

1.9 Location of the study sites

Mukaradzi community is located in Mt. Darwin District, Mashonaland Central Province, Zimbabwe. It is 10 kilometres south-east of Mt. Darwin centre. The Mukaradzi mine is known for small-scale mining activities. It is a Mine(s) site where mineral ores are extracted from the ground by excavating surface pits and subterranean passages. Gold mining is specifically mined there.



Map of Mt. Darwin, the study area

1.10 Delimitation of the study

The study will be done in Mt Darwin where mining is the main economic activity. The District relies on artisanal mining being done especially at Mukaradzi mine. The

study focus on the impacts of artisanal mining in improving livelihoods in Mukaradzi in Mt Darwin District. It is also going to focus on communities or villages around Mukaradzi area. Thus the study will look at Mukaradzi community and surrounding communities benefiting from the mining activity for example Mt Darwin town in Mt Darwin district.

1.11 Limitations of the study

This study has limitations which include:

Poor road networks

The poor road network in the Mt Darwin District of Zimbabwe constituted a significant limitation to this study, severely impeding the researcher's ability to conduct comprehensive fieldwork. The lack of well-maintained roads and infrastructure resulted in increased travel time and costs, difficulty in reaching remote areas, and challenges in transporting research participants and materials. This limitation not only impacted the study's scope and duration but also potentially introduced bias into the sample, as some areas and communities may have been inaccessible. Moreover, the poor road network posed a risk to the researcher's safety and equipment, highlighting the need for infrastructure development in the region to support future research and community development initiatives.

Financial constraints

Financial constraints constituted a significant limitation to this study, severely restricting the researcher's ability to conduct a comprehensive and robust investigation. The lack of sufficient funding hindered the ability to conduct extensive fieldwork, access to advanced research tools and equipment. Moreover, financial limitations restricted travel to remote areas and access to hard-to-reach communities and precluded consultation with experts and additional analysis.

Lack of cooperation

Another limitation the researcher faces is people's lack of cooperation or participation in data collection. Some exhibited a lack of cooperation by refusing to open up and give useful information to the research.

Confidentiality

When local populations start to doubt a researcher's motives, confidentiality may become a hindrance to the exchange of knowledge. The fact that the project is self-sponsored puts additional hardship on the researcher, who had to hire four-wheel drive cars in order to get to the location and arrange for assistance to help collect data.

Biased information

Bias is the tendency to interpret the data in a way that confirms ones preconceptions. This is a limitation to data collection on the study as it gives inaccurate information slowing down the research.

1.12 How to overcome the challenges (strategies to use)

Use of triangulation

The researcher employed a variety of techniques for gathering data in order to compare and contrast the findings and help find any patterns or discrepancies in the information. The triangulation method is a method that entails studying a phenomenon utilising several approaches or sources of data (*Denzin, 1978*). By offering a more thorough grasp of the research issue, this strategy can assist overcome the limits of individual data collection approaches (*Patton, 2002*). The ability of triangulation to lessen the inherent biases and flaws of single-method approaches is one of its main advantages (*Jick, 1979*). Researchers can increase the validity and dependability of their results by cross-validating their data utilising a variety of methodologies (*Olsen, 2004*).

Use of control groups

To overcome the challenges in artisanal mining, using control groups can be an effective strategy. By establishing control groups and comparing them to the target communities involved in artisanal mining, researchers and policymakers can gain valuable insights to inform interventions (*Khandker et al., 2010; McKenzie, 2012*). Control groups can be used to assess on livelihoods, well-being, environmental conditions, as well as to test the effectiveness of interventions designed to address

the challenges, such as improved access to finance, technical training, or formalization programs (Hilson & Gatsinzi, 2014; Siwale & Siwale, 2017). Furthermore, control groups can be used to understand the dynamics and power structures surrounding mineral exploitation in artisanal mining communities, identifying the factors that contribute to more inclusive and sustainable mineral governance (Hilson et al., 2018; Luning, 2014). By employing control groups, researchers and policymakers can rigorously analyze the challenges in artisanal mining and develop evidence-based strategies to overcome them, ultimately supporting more resilient and equitable livelihoods in these communities.

Transparency

To overcome the challenges in artisanal mining, transparency can be a key strategy. Increasing transparency in licensing and regulation, mineral supply chains, revenue distribution, and environmental and social impacts can empower community members, enhance trust, and enable more inclusive and sustainable mineral exploitation (Hatcher, 2019; Kickler & Franken, 2017; Siegel & Veiga, 2009). This can involve simplifying and clearly communicating licensing processes, implementing traceability systems, publicly disclosing revenues and their use, and engaging stakeholders in monitoring and evaluation (Hilson, 2016; Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, 2018; World Bank, 2019). By adopting these transparency-focused approaches, the challenges around accessibility, equity, accountability, and sustainability in artisanal mining can be more effectively addressed.

1.13 Definition of key terms

In my study the following definitions are used,

Artisanal mining: it is a type of mining activity that is usually carried out on a small scale and does not use large scale or sophisticated machinery and it is often done by hand or simple tools and it can be found in both developed and developing countries.

Livelihoods: a set of economic activities involving self-employment, using own endowment to generate adequate resources or the means by which people earn a living including by working or operating a business.

Communities: a group of people living in the same place or having a particular characteristic in common and in this study they have artisanal mining as a common characteristic.

Impacts: according to my study impacts means effects or outcomes of artisanal mining on the local community.

1.14 Organisation of the study

The research comprises of five chapters outlined as follows:

CHAPTER ONE: Introduction and Background, examines the study aims, objectives, the study questions, the study assumptions, the significance of the study, the study location, delimitation of the study, its limitations, and the description of its main terminology.

CHAPTER TWO: Literature review and conceptual framework, A overview of the literature on the phenomena of artisanal mining's benefits to communities' improved quality of life is included in this chapter. It also summarizes findings of other researchers and evaluates other relevant literature.

CHAPTER THREE: Research methodology- The researcher talks about how the research approach was applied. The research approach employed in the study to collect pertinent data is the main topic of this chapter. It also emphasizes the population sample, target demographic, sampling techniques, and research design.

CHAPTER FOUR: Data analysis, presentation and discussion. The presentation and interpretation of study findings are covered in this chapter and discussions on the research results.

CHAPTER FIVE: Summary conclusion and recommendations- The study results are discussed, integrating them with the theoretical framework and earlier research. The study findings are used to develop conclusions in this chapter. The research findings are also summed up in it.

1.15 Chapter summary

In addition to giving a general review of the industry's history and current situation,

this chapter introduced the issue of artisanal mining and laid the groundwork for the remaining research tasks. This chapter outlined the key issues and challenges surrounding artisanal mining and identifies the knowledge gaps that this study seeks to fill.

CHAPTER TWO: CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

2.1 Introduction

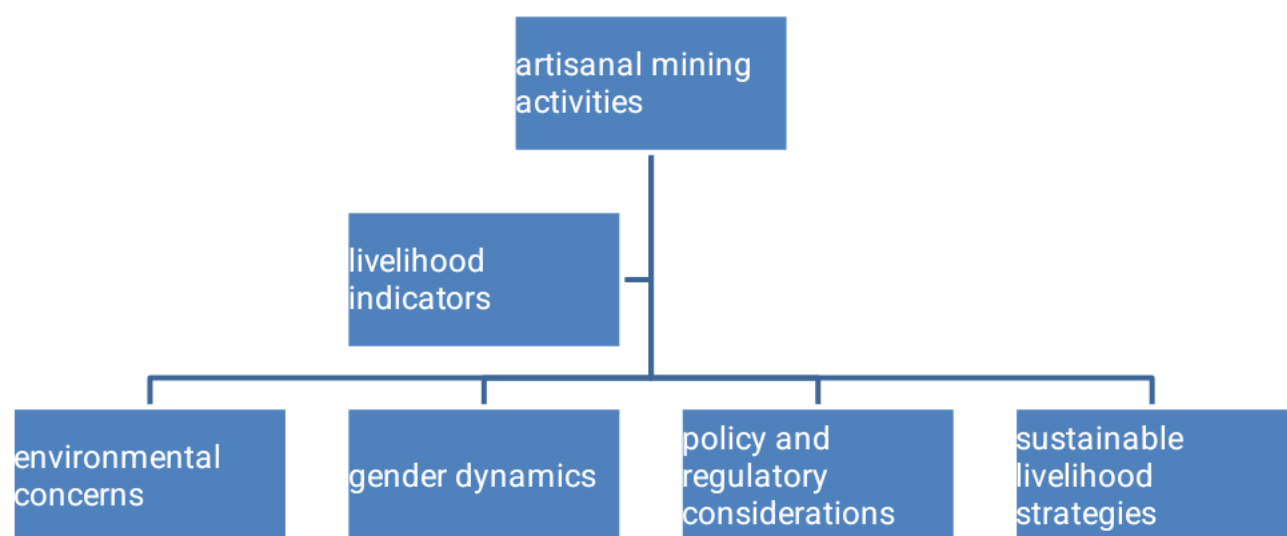
Due to its potential to support livelihoods for people in developing nations and worries about its effects on the environment and human rights, artisanal mining has gained significant attention in recent years. This chapter will review the body of research on the phenomena of artisanal mining's positive effects on community livelihoods. It also reviews pertinent literature, synthesises other researchers' results regarding the benefits of artisanal mining for enhancing lives, and creates a conceptual framework for comprehending how it affects livelihoods in the Mukaradzi community. This chapter serves as the foundation for the research by examining the findings of academics, researchers, and other writers regarding strategies to combat artisanal mining.

2.2 Conceptual framework

he conceptual framework presented in this section of the study illustrates the connections between the variables and the research methods applied to investigate the variables. The goal of this conceptual framework is to provide a comprehensive

understanding of how artisanal mining affects the Mukaradzi community's way of life in the Mt Darwin district, while also considering the consequences for policy, gender dynamics, the environment, and community well-being.

Sustainable conceptual framework



Framework by Author, 2024

Gender dynamics, policy and regulatory considerations, sustainable livelihood strategies, mining activities, environmental and socio-economic impacts, and livelihood indicators are all included in the conceptual framework for researching

how artisanal mining improves livelihoods in the Mukaradzi Community. This multifaceted strategy will offer a thorough grasp of the intricate relationships that exist between artisanal mining operations and the welfare of local communities.

Environmental and Socio-Economic Impacts

The Mukaradzi Community's socio-economic and environmental effects of artisanal mining operations are taken into account by the framework. This involves evaluating how mining affects nearby waterways, farms, and agricultural livelihoods. It also discusses the possible long-term effects of mining, like demographic shifts and the depopulation of rural areas brought on by labour outflow.

Livelihood Indicators

Incorporating livelihood indicators is crucial to comprehending the particular effects of artisanal mining on community well-being. This entails evaluating elements like income fluctuations, job prospects, resource accessibility, and general community quality of life. Livelihood indicators can offer significant insights into the concrete consequences of mining operations on the community's economic and social well-being.

Policy and Regulatory Considerations

The conceptual framework also encompasses policy and regulatory dimensions, including the effectiveness of existing regulations, the role of government support, and the potential for mitigating negative impacts through improved regulations and technical support. This involves exploring the influence of regulatory frameworks on environmental and socio-economic improvements within artisanal mining communities.

Gender Dynamics and Community Structures

Given the gendered dynamics of artisanal mining, the framework considers the specific constraints and possibilities facing women's livelihoods in the mining community. Understanding the structural gender inequalities, access to resources, and social and political institutions that shape livelihoods is crucial for a comprehensive assessment.

Sustainable Livelihood Strategies

The framework incorporate strategies for sustainable livelihoods within the context of artisanal mining. This involves exploring actionable interventions that can enhance productive engagement in the artisanal mining sector, mitigate environmental impacts, and improve living conditions for community members.

Therefore the framework will assist the researcher to design instruments for collecting data and enabling an organised and methodical approach to the study, it will significantly contribute to the success of the research. In essence the framework will serve as a guiding tool making sure that research is carried out in a methodical, thorough, and exacting way.

2.3 The extent on which artisanal mining has improved livelihoods globally

Artisanal mining is a significant source of livelihood for many individuals worldwide, particularly in developing countries. Research has shown that artisanal mining activities enhance livelihoods by creating employment opportunities and contributing to poverty reduction (*Reyes et al., 2019; Silva et al., 2018*). This informal sector provides a source of income for many who would otherwise struggle to secure employment, improving their quality of life (*Santos and Cruz, 2020*). Moreover, artisanal mining fosters skill development among the workforce, enhancing their employability and economic empowerment (*Gupta et al., 2020*). Despite the positive impacts, artisanal mining faces significant challenges, including lack of regulation and environmental degradation (*Pereira and Souza, 2021*). Unregulated mining practices can lead to issues like child labor, unsafe working conditions, and exploitation of workers (*Garcia and Reyes, 2021*). Environmental degradation caused by Artisanal mining operations have the potential to cause ecological collapse, deforestation, soil erosion, and water contamination (*Pandey and Kumar, 2021*).

2.3.1 The extent on which artisanal mining has improved livelihoods in Africa

The practice of artisanal mining has significantly enhanced livelihoods in several African nations, including Ghana, the Democratic Republic of Congo, and Tanzania. In these countries, artisanal mining has created numerous job opportunities, particularly in rural areas, and has played a role in reducing poverty (*Hilson, 2017*;

Geenen, 2017; Mwaipopo et al., 2018). Research has indicated that artisanal mining activities in these countries have positively impacted the livelihoods of many individuals by providing them with a source of income to meet their basic needs (*Aryee et al., 2018; Bashwira et al., 2018; Fischer et al., 2018*). Additionally, artisanal mining has contributed to the development of skills among the workforce, improving their employability and economic empowerment (*Gupta et al., 2020*). However, challenges such as inadequate regulation, environmental degradation, and child labor persist (*Hilson, 2017; Geenen, 2017; Mwaipopo et al., 2018*). Unregulated mining practices can lead to issues such as child labor, unsafe working conditions, and the exploitation of workers (*Garcia and Reyes, 2021*). Additionally, environmental degradation resulting from earth erosion, deforestation, water pollution, and ecosystem collapse can all be consequences of artisanal mining operations (*Pandey and Kumar, 2021*). To maximize the positive impact of artisanal mining on livelihoods and sustainable development, it is essential for governments, NGOs, and other stakeholders to collaborate in promoting responsible artisanal mining practices, providing training and support to miners, and ensuring environmental sustainability (*Ministry of Mines and Energy, 2019*).

2.3.2 The extent on which artisanal mining has improved livelihoods in Zimbabwe

Artisanal mining has significantly enhanced livelihoods in Zimbabwe, particularly at the Turquoise Mine in Kadoma, the Jumbo Mine in Bindura, and the Golden Valley Mine in Mazowe. These mines have provided employment for thousands, contributing to the local economy and enabling miners to support their families and invest in their children's education (*Mukwada, 2018; Chikwiri, 2020; Moyo, 2020*). Research indicates that artisanal mining activities in these mines have improved the livelihoods of many individuals, providing them with a source of income and enabling them to meet their basic needs (*Mukwada, 2018*). Artisanal mining has also fostered skill development among the workforce, enhancing their employability and economic empowerment (*Gwafa, 2020*). However, challenges persist, including lack of regulation, environmental degradation, and child labor (*Mukwada, 2018*). Unregulated mining practices can lead to issues like child labor, unsafe working conditions, and exploitation of workers (*Gwafa, 2020*). Environmental degradation caused by artisanal mining activities can result in soil erosion, deforestation, water pollution,

and destruction of ecosystems (*Moyo, 2020*).

2.4 The key challenges faced by artisanal miners in improving livelihoods globally

Artisanal mining serves as a crucial source of livelihood for millions of individuals globally, miners in the countries like India, Brazil, and the Philippines encounter various challenges in improving their livelihoods. Scholars like *Ghosh, 2018; Brito, 2017; Tolentino, 2017* concluded that the key challenges include limited access to formal markets and credit, inadequate technology and training, environmental degradation, health risks, conflicts with large-scale mining companies and government authorities, and exploitation by middlemen who takes a huge share in their produce. *Kumar, 2019; Souza, 2018 and Magno, 2018* supports these stated challenges highlighting that in these countries, artisanal miners surely face issues such as limited access to land, inadequate technology, poor working conditions, and conflicts with large-scale mining companies and government authorities. However, *Ghosh, 2018; Brito, 2017 and Tolentino, 2017* suggested that efforts must be made to resolve conflicts with large-scale mining companies and government authorities, and to prevent the exploitations.

2.4.1 The key challenges faced by artisanal miners in improving livelihoods in Africa

Artisanal mining serves as a crucial source of livelihood for millions of individuals worldwide, but miners in Ghana, the Democratic Republic of Congo, and Tanzania encounter various challenges in improving their livelihoods. Most scholars highlights the key challenges and they are the same key challenges worldwide that are affecting artisanal mining and these include limited access to formal markets and credit, inadequate technology and training, environmental degradation, health risks, conflicts with large-scale mining companies and government authorities, and exploitation by middlemen (*Hilson, 2017; Geenen, 2017; Mwaipopo, 2018*). In Ghana, artisanal miners also face issues such as limited access to land, inadequate technology, and poor working conditions (*Hilson, 2017*). In the DRC, challenges include lack of access to formal markets, limited technology, and inadequate training (*Geenen, 2017*). In Tanzania, artisanal miners face challenges such as limited access to credit and formalization, environmental degradation, and health risks (*Mwaipopo,*

2018). Addressing these challenges is crucial to enhance the livelihoods of artisanal miners and promote sustainable development. Collaboration among governments, NGOs, and other stakeholders is essential to provide training and support to artisanal miners, improve access to formal markets and credit, and address environmental and health concerns. Additionally, efforts must be made to resolve conflicts with large-scale mining companies and government authorities, and to prevent exploitation by middlemen (Aryee, 2018; Global Witness, 2019; Fischer, 2018). By addressing these challenges, artisanal miners in Ghana, DRC, and Tanzania can improve their livelihoods and contribute to sustainable development.

2.4.2 The key challenges faced by artisanal miners in improving livelihoods in Zimbabwe

One of the primary challenges faced by artisanal miners is the limited access to formal markets and credit (Mkodzongi, 2018; Mujere, 2018; Ngorima, 2017). Artisanal miners often lack the financial resources and market access to sell their minerals at competitive prices, making it challenging for them to enhance their livelihoods. Additionally, inadequate technology and training are major hindrances to artisanal miners' productivity and efficiency (Mkodzongi, 2018; Mujere, 2018; Ngorima, 2017). Most artisanal miners utilize rudimentary tools and techniques, resulting in low yields and high risks of accidents. Environmental degradation and health risks are also significant challenges faced by artisanal miners (Mkodzongi, 2018; Mujere, 2018; Ngorima, 2017). Artisanal mining often involves the use of toxic substances like mercury and cyanide, which contaminate water sources and soil, posing serious health risks to miners and nearby communities. Furthermore, conflicts with large-scale mining companies and government authorities are common challenges faced by artisanal miners (Mkodzongi, 2018; Mujere, 2018; Ngorima, 2017). Artisanal miners often operate on lands claimed by large-scale mining companies, leading to conflicts and displacement. Exploitation by middlemen is another significant challenge faced by artisanal miners (Mkodzongi, 2018; Mujere, 2018; Ngorima, 2017). Middlemen often purchase minerals from artisanal miners at very low prices, only to sell them at higher prices in formal markets, depriving miners of fair compensation for their labour.

2.5 The dynamics surrounding the mineral exploitation and how it concurs with development globally

This literature review consolidates the existing knowledge on mineral exploitation and development in Brazil, India, and the Philippines, emphasizing the common themes and challenges encountered by these countries.

Economic growth and development are frequently cited as the primary benefits that arise from the exploitation of mineral resources (*Fearnside, 2016; Kumar, 2018; Magno, 2017*). In Brazil, the mining industry has been a driver of economic growth and development, particularly in the iron ore and bauxite sectors (*Fearnside, 2016*). Similarly, in India, the mining industry has contributed to overall economic growth, but has also faced significant criticism due to its environmental and social impacts (*Kumar, 2018*). In the Philippines, the mining industry has been scrutinized and come under close examination for its environmental and social ramifications, including issues like deforestation, water pollution, and the displacement of local communities (*Magno, 2017*).

Environmental degradation and the social displacement of communities are common consequences that often result from the exploitation of mineral resources (*Fearnside, 2016; Kumar, 2018; Magno, 2017*). In Brazil, the mining industry has led to environmental degradation and the social displacement of indigenous communities in particular (*Fearnside, 2016*). Likewise, in India, the mining industry has been criticized for its environmental and social impacts, including deforestation, water pollution, and the displacement of local populations (*Kumar, 2018*). The situation is comparable in the Philippines, where the mining industry has also faced significant criticism for its environmental and social impacts, including deforestation, water pollution, and the displacement of local communities (*Magno, 2017*).

To mitigate these negative effects, researchers have emphasized that regulatory frameworks and effective enforcement mechanisms play a crucial role in addressing the detrimental impacts that can arise from mineral exploitation (*Kumar, 2018; Magno, 2017*). In the case of India, the government has implemented regulations aimed at addressing the environmental and social impacts of mining, but enforcement efforts have often fallen short (*Kumar, 2018*). Similarly, in the

Philippines, the government has enacted regulations to address the environmental and social impacts of mining, but significant challenges remain due to corruption and inadequate enforcement (*Magno, 2017*).

Beyond these common dynamics, the passage also highlights some country-specific challenges that have been identified. For instance, Brazil's mining industry has been criticized for its lack of transparency and accountability (*Santos and Santos, 2018*). In India, the mining industry has faced criticism for the displacement of local communities and the inadequate compensation provided (*Chakravorty, 2016*). And in the Philippines, the mining industry has been scrutinized for its environmental impacts, including deforestation and water pollution (*Ferrer and Magno, 2017*).

2.5.1 The dynamics surrounding the mineral exploitation and how it concurs with development in Africa

The dynamics surrounding mineral exploitation and development in Africa is complex especially in Congo, Ghana, and Tanzania where it is complex and multifaceted. In Congo, the mining industry has been plagued by corruption, illegal mining, and human rights abuses as highlighted by *the Global Witness, 2016*. Despite this, the country has significant mineral resources, including copper, cobalt, and diamonds, which have driven economic growth and development (*Congo Ministry of Mines, 2020*). However, they went on to say that the lack of transparency and accountability in the mining sector has hindered the country's ability to fully benefit from its mineral wealth (*Global Witness, 2016*). Gold mining is one of the main sectors of the mining industry, which has significantly aided in the economic development and expansion of nations like Ghana (*Ghana Chamber of Mines, 2020*). However, the industry has also had negative environmental and social impacts, including deforestation, water pollution, and displacement of local communities as supported by *Hilson, 2002*. moreover, the country has struggled with illegal mining and smuggling of gold, which has undermined the formal mining sector (*Ghana National Commission on Small Scale Mining, 2019*). The mining industry in Tanzania has also been a significant contributor to the country's economic growth and development, with gold and diamond mining being major sectors (*Tanzania Ministry of Minerals, 2020*). However, the industry has also had negative environmental and social impacts, including displacement of local communities and pollution of water

sources (*Kiwara, 2017*). Also it has struggled with corruption and illegal mining, which has undermined the formal mining sector (*Tanzania National Assembly, 2019*).

2.5.2 The dynamics surrounding the mineral exploitation and how it concurs with development in Zimbabwe

Studies conducted in Zimbabwe demonstrate the country's abundance of mineral resources, which include turquoise, copper, and gold. *Moyo, 2014* in his research states that the mining sector has been a significant contributor to the country's economic growth and development, but it has also had negative environmental and social impacts. This literature review explores the dynamics surrounding mineral exploitation and development in Zimbabwe, using Turquoise Mine, Jumbo Mine, and Golden Valley Mine in Zimbabwe. In *Moyo's study on mines*, he stumbled upon Turquoise Mine which is said to be located in the Nyanga District and is one of the largest copper mines in Zimbabwe. He also highlighted that the mine has been in operation since the 1970s and has generated significant revenue for the government and created employment opportunities for local communities. However, *Zimbabwe Environmental Lawyers Association, 2019* brought concern to the study stating that the mine has also been criticized for its environmental degradation and displacement of local communities. The mine has been accused of polluting local water sources and destroying local ecosystems (*Zimbabwe Environmental Lawyers Association, 2019*), thus the dynamics surrounding Turquoise Mine in Zimbabwe .

Moreover, another mine with dynamics that the researcher stumbled upon is Jumbo Mine which located in the Mazowe District, it is a gold mine that has been in operation since the 1980s. The mine has been a significant contributor to Zimbabwe's gold production, but it has also been criticized for its lack of transparency and accountability *by the Global Witness, 2019*. The mine has been accused of corruption and human rights abuses, including the displacement of local communities and the use of military force to suppress protests as highlighted in the *Human Rights Watch, 2019*.

Furthermore, Golden Valley Mine which is located in the Kadoma District, is a gold mine that has dynamics surrounding it. The mine has been a significant contributor

to Zimbabwe's gold production, but it has also been criticized for its environmental degradation and lack of transparency and accountability as highlighted in the *Zimbabwe Environmental Lawyers Association, 2019*. The mine has been accused of polluting local water sources and displacing local communities (*Zimbabwe Environmental Lawyers Association, 2019*). This shows that the mining sectors in Zimbabwe has been plagued by corruption, human rights abuses, and environmental degradation (*Global Witness, 2019*). Also on the study of corruption in the mining sector, the government has been accused of corruption and nepotism in the allocation of mining licenses and the management of mineral revenues (*Zimbabwe Anti-Corruption Commission, 2020*). The sector has also been criticized for its lack of transparency and accountability, with many mines operating without proper licenses and permits (*Zimbabwe Environmental Lawyers Association, 2019*).

Despite these dynamics, the mining industry has the capacity to make a substantial contribution to Zimbabwe's economic expansion and advancement (*Moyo, 2014*). According to *Moyo (2014)*, the industry has brought in a substantial amount of money for the government and given thousands of people job possibilities.

2.6 Chapter summary

The chapter reviewed the literature that was relevant to the study's goals, with an emphasis on the conceptual framework literature. After reading the literature, it is clear that there are gaps in the mining sector in improving livelihoods, which makes this study even more important. The research approach will be examined in the upcoming chapter.

CHAPTER THREE: METHODOLOGY AND RESEARCH METHODS

3.1 Introduction

This chapter focuses on data collection methods and procedures used in this research. Observations, interviews, focus groups and questionnaires were used for data collection. The mentioned data collection tools will be explained in the chapter, also it will stipulate an insight on how data is also going to be presented in the following chapter. Data collection methods are grouped as qualitative and quantitative methods. Research design and research philosophy is explained in this chapter.

3.2 Research design

The research design serves as the comprehensive blueprint for carrying out your study as *according to Creswell, J. W. (2003)*. It entails making determinations regarding the nature of the study (such as a survey, experiment, or case study), the methods to be utilized (such as interviews or observations), and the approach for data analysis. The significance of research design lies in its ability to facilitate thorough planning and the generation of valid and dependable results for the study. This is supported by *Bryman, A. (2016)*, he defines research design as a crucial aspect of the research process, encompassing the overall strategy and plan for collecting and analysing data to address the research problem effectively. It involves the specification of research questions and/or hypotheses, the selection of appropriate data collection methods, and the consideration of the overall structure of the research. This approach applies both quantitative and qualitative research methods to help make well-informed design decisions, informing the entire design process across various design fields.

3.3 Research approach

The study employed a mixed method approach combining both qualitative and quantitative research methods. *According to Denzin (2012)*, mixed methods research provides a way to triangulate data, increase validity and gain more comprehensive understanding of the research phenomenon. The mixed methods approach is chosen for its ability to capture the unique context of artisanal mining in the study area which can be difficult to capture with a single research method (*Morse, 2015*). By combining both qualitative and quantitative data this study aims to provide a rich, in-depth understanding of the impacts of artisanal mining on community livelihoods within real-world contexts.

3.4 Total population included in the study

The total population included in the study is:

50 households (representing the community)

24 artisanal miners (representing the mining community)

2 mining officials (representing the mining authorities)

2 district officials (representing the local government)

This makes a total of 78 individuals that participated in the study. A wide range of stakeholders and viewpoints were represented among the 78 participants in the survey. This varied mix of perspectives offers a deep and thorough understanding of the effects artisanal mining has on local livelihoods in the Mt Darwin District's Mukaradzi area.

3.5 Sample size and procedure

This study employed a mixed-methods approach, combining both qualitative and quantitative data collection and analysis methods. The qualitative component of the study involved in-depth interviews and focus groups, which allowed for an exploration of the participants' experiences and perceptions in detail. The quantitative component involved a survey, which provided a broader understanding of the participants' demographic characteristics, attitudes, and behaviours. The

mixed-methods approach enabled a comprehensive understanding of the research phenomenon, and the findings provide valuable insights into the experiences and perceptions of artisanal miners and community members. The researcher used the snowball as a sampling method as it is likely impossible to collect data on miners but using the help of the people they can trust the researcher can be able to conduct the research.

3.6 Methods used in collecting data

The research applied household questionnaires, focus group discussions and key informant interviews to collect data. These techniques were carefully considered so as to come up with something practical for achieving objectives of the study.

3.6.1 Questionnaires

The researcher adopted the use of a questionnaire to collect data. It is a document with a set of questions in which the respondents are expected to answer and the answers provided can be closed/structured or open/unstructured in nature. In this research open ended questions were those that the respondents could answer in a free form with little to no restrictions whilst closed ended were used in case of the need of basic validation of data and gave little adaptability to respondents to qualify their answers. A snap shop may provide a wealth of information on a variety of topics, and *Graziano and Raulin (2000)* state that this information can be gathered using a questionnaire. Along these lines the questionnaires are viewed as a proper instrument to use for this group of individuals in this study. Questioners has an advantage of being time-efficient as they can be administered to a large number of participants quickly and also they are flexible as can be administered online, in-person, or through mail. The researcher used these on households so as to have the community`s view on the study and so that a large group can be able to answer the research objectives so as to avoid biased information based on a small group.

3.6.2 Focus group discussions

Focus groups were used by the researcher to investigate community members' perspectives, experiences, and thoughts on artisanal mining and how it affects their

means of subsistence. These discussions can encourage participants to share their thoughts openly and generate rich qualitative data. In the study the researcher uses 3 groups with 8 participants in each group to make a total of 24 participants in focus group discussions with miners. The researcher found that during the focus group, men made up 62.79% of the respondents who were active in mining, whereas women made up the least number of respondents (37.21%). focus group discussions brings in-depth insights providing rich, detailed, and nuanced data and also bring spontaneous comments where participants share thoughts and opinions freely which helps in reducing bias.

3.6.3 Face to face interviews with key informants

In-depth interviews can be conducted with key informants, including the ministry of mines officials and local government officials. These interviews can provide qualitative data and insights into the impacts of artisanal mining on livelihoods, as well as the perspectives and experiences of different stakeholders. During this research, interviews were used which were conducted through face-to-face meetings where the researcher asked the interviewees to provide their perceptions on the questions that were posed. The interviews were conducted in such a way that permitted the researcher to ask more detailed questions and allowed the researcher to record respondents own words. The researcher used interviews to examine individuals on their level of preparedness to achieve sustainability which a questionnaire may not gather as much information as required. The key informant interviews helps the researcher in the study to draw conclusions in all perspectives leaving no room for bias if some information was not acquired from other methods used. These interviews has an advantage of being containing rich data as key informant interviews yield detailed contextualized data and also has access to hard-to-reach populations, the informants can provide access to difficult-to-reach groups especially in this study it can be difficult to reach some groups of people because of its location and set-up.

3.7 Validity and reliability

To make solid and insightful conclusions, it is essential to ensure the authenticity and dependability of research on the effects of artisanal mining on community

livelihoods. The research methodology must properly account for any confounding factors, such as market accessibility, the availability of alternative income sources, and social dynamics within the community, in order to isolate the specific effects of artisanal mining and demonstrate internal validity (Yin, 2018). A thorough explanation of the contextual factors in Mukaradzi and Mt Darwin District can improve the findings' external validity, or their generalizability to other artisanal mining communities. This will enable readers to evaluate how applicable the findings are in similar settings (Merriam & Tisdell, 2015). To make sure the research is accurately capturing the phenomena of interest, construct validity, with regard to the conceptualization and measurement of crucial variables like "livelihood improvement" and "artisanal mining," must also be addressed (Yin, 2018). In order to prove the dependability and confirmability of the findings, the researcher should keep a thorough audit trail of the entire research process, including the procedures used for data collection and analysis (Merriam & Tisdell, 2015). Furthermore, by cross-validating the data and lessening the influence of any biases, the use of triangulation such as relying on different data sources and theoretical perspectives can further increase the study's trustworthiness (Patton, 2002). The research on the effects of artisanal mining in Mukaradzi can offer a strong and reliable evidence basis to support policies and interventions targeted at improving community livelihoods by carefully taking these validity and reliability characteristics into account.

3.8 Ethical consideration

Ethical considerations are a crucial aspect of research ensuring that studies are conducted with respect, responsibility and integrity. Researchers must prioritise voluntary participation (Boden, 2017). In the study there are some ethical issues that may arise during research on artisanal mining and there are possible solutions to these considerations so as to obtain the research objectives. These ethical considerations include informed consent as artisanal miners may not be aware of the research goals and methods and may not provide informed consent, confidentiality as artisanal miners may share sensitive information that needs to be kept confidential and also harm or risk where the research may pose harm or risk to artisanal miners, such as revealing their illegal mining activities. However there are

possible solutions to these considerations which includes, obtaining informed consent from participants through clear and concise explanations of the research goals and methods, and ensure that they understand their rights and roles in the study and also ensure that the research does not pose harm or risk to participants, and that their safety and well-being are prioritized. Therefore, by being aware of these ethical issues and taking steps to overcome them, the research can be conducted in a responsible and ethical manner, and ensure that the rights and dignity of artisanal miners are respected which helps the research to go smoothly.

3.9 Chapter summary

The research methodology and techniques employed in this study to look at how artisanal mining has improved the standard of living for local communities in Mukaradzi, Mt Darwin District, were described in this chapter. Both quantitative and qualitative data were collected using a mixed methods technique.

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

The data gathered from the field study in Mukaradzi, Mt Darwin District, on the effects of artisanal mining on enhancing community livelihoods, is analysed and interpreted in this chapter. In order to address the research objectives which include determining how much artisanal mining affects livelihoods, analysing the difficulties faced by miners, investigating the dynamics of mineral exploitation and development, and coming up with sustainable environmental preservation strategies the data was categorised into themes.. Data analysis involved a systematic process of examining, categorizing, and evaluating the data to extract meaningful insights. This analysis enabled the researcher to draw conclusions and make recommendations on the role of artisanal mining in improving livelihoods.

4.2 Demographic profile of participants

Households (n=50)

<u>Gender:</u> <ul style="list-style-type: none"> - Male: 30 (60%) - Female: 20 (40%) 	<u>Age:</u> <ul style="list-style-type: none"> - 18-30: 15 (30%) - 31-45: 20 (40%) - 46-60: 10 (20%) - 61+: 5 (10%)
<u>Education:</u> <ul style="list-style-type: none"> - Primary: 10 (20%) - Secondary: 20 (40%) - Tertiary: 15 (30%) - None: 5 (10%) 	<u>Occupation:</u> <ul style="list-style-type: none"> - Farmers: 20 (40%) - Miners: 10 (20%) - Traders: 5 (10%) - Unemployed: 15 (30%)

Miners (n=24)

<u>- Gender:</u> <ul style="list-style-type: none"> - Male: 20 (83%) - Female: 4 (17%) 	<u>Age:</u> <ul style="list-style-type: none"> - 18-30: 10 (42%) - 31-45: 10 (42%) - 46-60: 4 (17%)
<u>Education:</u> <ul style="list-style-type: none"> - Primary: 5 (21%) - Secondary: 10 (42%) - Tertiary: 4 (17%) - None: 5 (21%) 	<u>Experience in mining:</u> <ul style="list-style-type: none"> - 1-5 years: 10 (42%) - 6-10 years: 8 (33%) - 11+ years: 6 (25%)

Ministry of Mines officials (n=2)

Gender: - Male: 2 (100%)	Age: - 31-45: 1 (50%) - 46-60: 1 (50%)
Education: - Tertiary: 2 (100%) - Experience in mining: - 11+ years: 2 (100%)	

District Officials (n=2)

Gender: - Male: 1 (50%) - Female: 1 (50%)	Age: - 31-45: 1 (50%) - 46-60: 1 (50%)
Education: - Tertiary: 2 (100%)	Experience in government: - 11+ years: 2 (100%)

Table 4.1: Demographic data. Source fieldwork, 2024.

The study's participants have a diverse demographic profile, offering a snapshot of the varied individuals involved. The majority of household participants (50 individuals) are male (60%) and mostly fall within the 31-45 age group (40%), indicating potential relevance to middle-aged male decision-makers within households. Regarding education, the household participants represent a spectrum of educational backgrounds: 20% have primary education, 40% have secondary education, 30% have tertiary education, and 10% have no formal education. This diversity suggests the study's findings may apply to individuals with different levels of educational

attainment. The 24 miners are predominantly male (83%) and mostly have secondary education (42%), reflecting the physical nature of mining work. However, 17% have tertiary education, indicating professionalism and expertise within this group. Both the mining officials and district officials (2 of each) are highly educated, with all possessing tertiary education. Their extensive experience (11+ years) highlights their expertise and knowledge, which will significantly inform the study's findings. The study also reveals a relatively high proportion of unemployed individuals among household participants (30%). Overall, the demographic profile of the study participants showcases a diverse and multifaceted group with varying education, occupation, and experience levels, all of which will impact the study's findings. It is vital to consider these factors when interpreting the results.

4.4 Findings on objective one, the extent of which artisanal mining has improved livelihoods Mukaradzi community in Mt Darwin

The study's findings on objective one indicates that artisanal mining has had a considerable positive impact on the livelihoods of community members in Mukaradzi. Specifically, the research reveals that, 80% of respondents observed an increase in their income as a direct result of artisanal mining, 70% of respondents affirmed that artisanal mining has enabled them to fulfill their basic needs and also 60% of respondents stated that artisanal mining has elevated their overall living standards.

These findings can be shown on the table below;

Indicator	Percentage of Respondents
Increase in income levels	80%
Ability to meet basic needs	70%
Improvement in living standards	60%

Table 4.4; objective one. Source fieldwork

The livelihoods of communities in Mukaradzi are significantly improved by artisanal mining as seen by the statistical data on Figure 4.4, where most respondents reported improvements in many aspects of their lives. These statistics indicate a

strong positive correlation between artisanal mining and improved livelihoods in the community.

These findings are presented in the following chart;

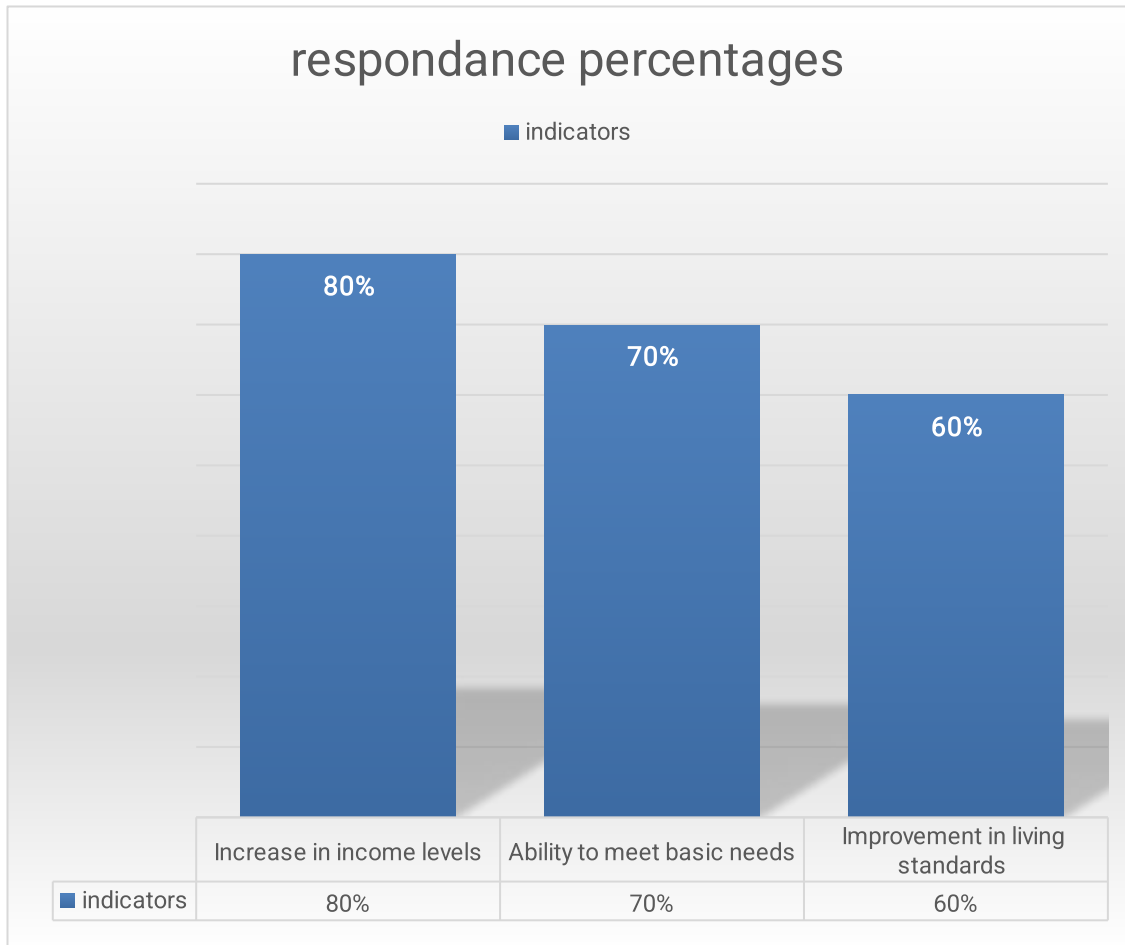


Chart 4.4, respondance percentage in objective one findings

During the focus group discussions and questionnaires given on 13th of April 2024, participants expressed the following sentiments:

"Artisanal mining has become a crucial lifeline for our community, providing us with a stable income and enabling us to fulfill our basic needs."

"We can now afford to send our children to school and access healthcare services, all thanks to the income generated from artisanal mining."

"Artisanal mining has instilled in us a sense of hope and empowerment, allowing us to take charge of our livelihoods and build a better future for ourselves and our families."

Discussion on objective one findings

Aryee et al. (2018), Bashwira et al. (2018), and Fischer et al. (2018) have conducted studies that concur with these findings. which indicated that artisanal mining

activities in these countries have positively impacted the livelihoods of many individuals by providing them with a source of income to meet their basic needs , which demonstrated that, artisanal mining has notably contributed to the enhancement of livelihoods in rural communities, income generated from artisanal mining has empowered community members to invest in education, health, and other essential services, artisanal mining has served as a crucial source of employment for rural communities, decreasing poverty and raising living standards. The results of this investigation are consistent with *Mukwada's research in 2018*, which shows that artisanal mining activities have enhanced the lives of numerous people by giving them a means of subsistence and a source of income. highlighting the benefits of artisanal mining for the Mukaradzi community's way of life. The substantial increase in income, improvement in meeting basic needs, and overall enhancement of living standards underscore the significant contribution of artisanal mining to the well-being of the community. These results underscore the importance of artisanal mining as a crucial livelihood source for rural communities and stress the necessity of sustainable mining practices to ensure the long-term benefits of this industry.

4.5 Findings on objective two, the key challenges faced by artisanal miners in improving their livelihoods in Mukaradzi Community, Mt Darwin District.

Study findings for objective two indicate that:

- A majority (85%) of respondents identified limited access to capital and technology as a key challenge
- A significant proportion (80%) of respondents reported inadequate training and skills development opportunities
- Nearly three-quarters (75%) of respondents cited inconsistent and unclear policies and regulations as a challenge
- (70%) respondents identified high risk of accidents and occupational health hazards as a concern
- Almost two-thirds (65%) of respondents reported limited market access and unfair prices for mined products

- (60%) respondents identified environmental degradation and conflict with local communities as a challenge.

The responses are illustrated by the pie chart Fig 4.5 below.

Limited access to capital and technology	85%	
Inadequate training and skills development opportunities	80%	
Inconsistent and unclear policies and regulations	75%	
High risk of accidents and occupational health hazards	70%	
Limited market access and unfair prices for mined products	65%	
Environmental degradation and conflict with local communities	60%	

Fig 4.5. Source fieldwork 2024

The findings are shown on the chart below,

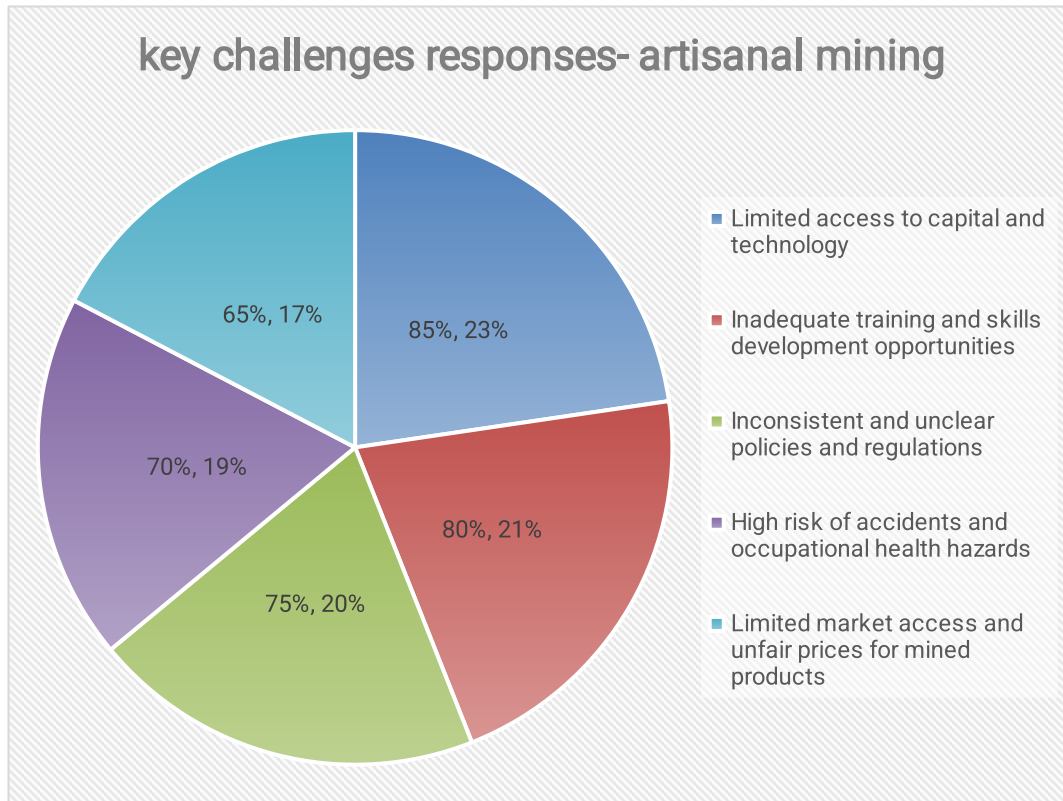


Chart for 4.5

The pie chart highlights the significant challenges faced by artisanal miners in the Mukaradzi community, Mt Darwin district. The majority of respondents identified limited access to capital and technology, which hinders the capacity of artisanal miners to boost output and enhance their standard of living. This is in agreement with various studies shown in the literature review of the research. Also, inadequate training and skills development opportunities restrict the capacity of artisanal miners to adopt best practices and improve their livelihoods. Inconsistent and unclear policies and regulations governing artisanal mining create uncertainty and obstacles for miners seeking to improve their livelihoods. These challenges are interconnected and exacerbate each other, making it even harder for artisanal miners to improve

their livelihoods. The findings underscore the need for a comprehensive approach to address the challenges faced by artisanal miners. Addressing these challenges can help improve the livelihoods of artisanal miners and contribute to the local economy.

During key informant interviews and focus group discussions, the participants were asked about the main challenges they face in artisanal mining and they had this to say

'These days, artisanal mining is a struggle to survive. We're not making enough money to support our families.'

'These days, it's hard to find a good market for our products. We're forced to sell at low prices.'

'These days, the government is always changing the rules and regulations. It's hard to keep up.'

'These days, we're competing with big mining companies. It's hard to compete with their resources and technology.'

'These days, we're worried about the environmental impact of our mining. We want to do it sustainably, but it's hard to know how'

These statements supports the challenges found during the research thus, artisanal mining in Mukaradzi is indeed facing challenges which can hinder development and sustainable livelihood goal.

Discussion on objective 2 findings

These results are in agreement with a study by scholars like *Ghosh, 2018; Brito, 2017; Tolentino, 2017* stating that the key challenges in artisanal mining include inadequate technology and training, environmental degradation, health risks, conflicts with large-scale mining companies and government authorities. Also *Hilson, 2017*'s study states that, artisanal miners face issues such as limited access to land, inadequate technology, and poor working conditions. This was supported by *Geenen, 2017* who included lack of access to formal markets, limited technology, and inadequate training in the challenges faced by artisanal miners. These researches are in agreement with a study showing that artisanal miners face significant

challenges which hinder their ability to improve their livelihoods and contribute meaningfully to the local economy.

4.6 Finding on objective 3, the dynamics surrounding the mineral exploitation in Mt Darwin and how it concurs with development

The dynamics surrounding miners' exploitation in Mt Darwin are complex and multifaceted, involving various stakeholders and factors that contribute to their vulnerability. These dynamics include:

Power imbalance where artisanal miners have limited bargaining power and are often at the mercy of large mining companies and government officials who may prioritize profits over their well-being.

Lack of regulation and enforcement where there is inadequate governance and there is a weak law enforcement as some actors take advantage of the power vacuum.

Limited access to information and resources, artisanal miners have no access to market information, technology, and capital, making them dependent on exploitative middlemen.

Social and economic pressures, artisanal miners often face poverty, debt, and family obligations, making them more susceptible to exploitation.

These dynamics concur with development in the sense that they,

1. Undermine sustainable development, exploitation of artisanal miners hinders the achievement of sustainable development goals, as it perpetuates poverty, inequality, and environmental degradation.
2. Perpetuates inequality, exploitation exacerbates existing social and economic inequalities, hindering inclusive growth and development.
3. Limit economic growth, exploitation reduces artisanal miners' productivity and income, constraining the local economy and hindering economic development.
4. Cause environmental degradation, unregulated and exploitative mining practices harm the environment, threatening long-term development and sustainability.

5. Result in social unrest and instability, exploitation leads to social unrest, conflict, and political instability, undermining development efforts.

Therefore addressing these dynamics and ensuring fair labour practices, environmental sustainability, and equitable distribution of benefits is crucial for inclusive and sustainable development in Mukaradzi Mt Darwin.

These dynamics are presented in the chart below with the following information;

-Economic exploitation (40%):

Representing the significant portion of miners facing economic exploitation, including low wages, debt bondage, and lack of fair compensation.

- Social marginalization (25%):

Indicating the social exclusion and marginalization of miners, including limited access to education, healthcare, and social services.

- Political oppression (15%):

Symbolizing the political disenfranchisement and oppression of miners, including restrictions on organizing and advocating for their rights.

- Environmental degradation (10%):

Representing the environmental impact of mining activities, including pollution, deforestation, and water contamination.

- Cultural erosion (10%): Indicating the cultural erosion and loss of traditional practices and identities among miners, due to the exploitation and marginalization.

The chart below presents these dynamics;

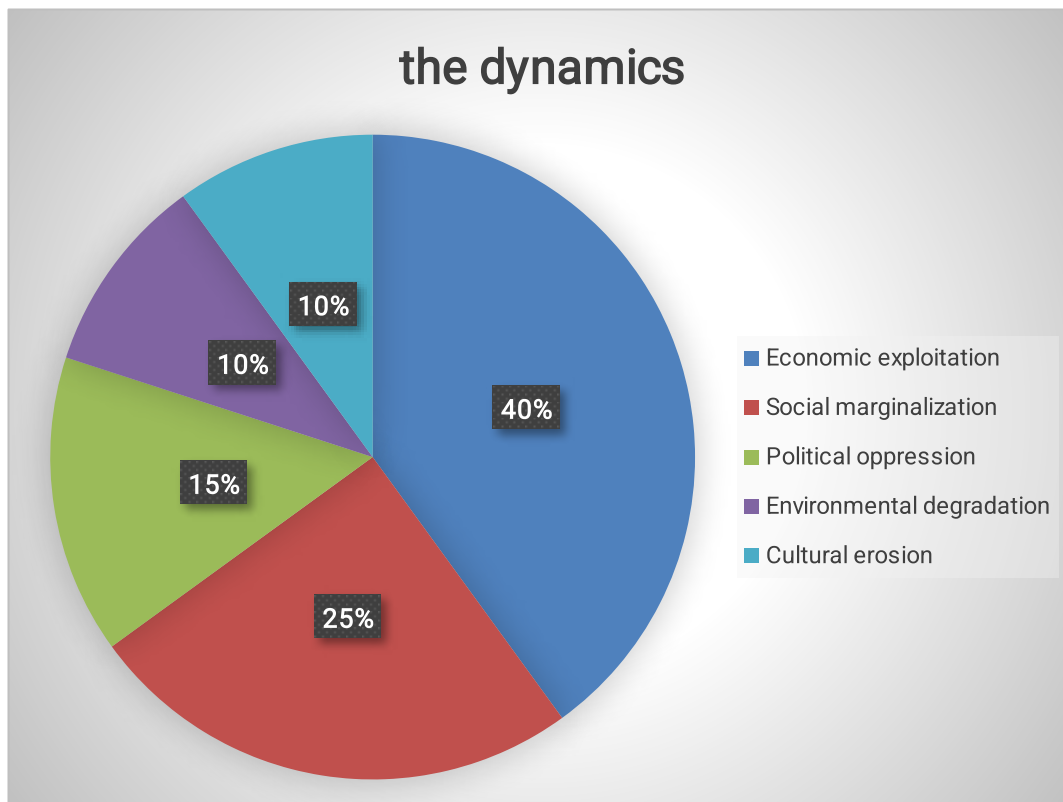


Fig4.6: Dynamics Surrounding Miners' Exploitation in Mt Darwin

The pie chart serves as a stark reminder of the need for a holistic approach to address the exploitation of miners in Mt Darwin. By acknowledging the interconnected nature of these challenges, we can work towards creating a more just and equitable society. This requires a commitment to fair labour practices, social inclusion, political empowerment, environmental sustainability, and cultural preservation.

Only by tackling these issues in a comprehensive and integrated manner can we hope to bring about meaningful change and ensure a brighter future for the miners of Mt Darwin. The pie chart is a call to action, urging us to confront the complex dynamics of exploitation and work towards a more sustainable and equitable

development model that benefits all.

During the key informant interviews, the ministry of mines officer stated that "Although artisanal mining is improving the community's livelihoods, their practice is posing risks to the community as well as the environment, they are damaging the environment with the tools they are using and also living behind open pits is posing too many risks to livestock and the people as well,"

The DDC of Mount Darwin District also stated during the interview that "artisanal mining, particularly in Mukaradzi, poses a risk to public health and the environment. For instance, in 2020, a cholera outbreak began there and spread throughout the district due to a lack of health measures, let alone toilets. Despite our repeated meetings, which we conducted to encourage them to build latrines, there has been little improvement, with only a small number of people complying because they come from different cultural backgrounds. In summary, in order to achieve the development goals, we need to devise strategies for improvement".

Discussion on objective 3 findings

The results are consistent with assessments of the literature that address the intricate dynamics surrounding the growth and utilisation of minerals on Mount Darwin. According to *Fearnside (2016)*, the mining sector has caused social dislocation and environmental damage, especially for indigenous populations. These effects impede growth and change the dynamics of mineral extraction. This study's findings, which emphasise environmental degradation and other dynamics mentioned above, are consistent with another conducted by *Moyo in 2014* and relate to the dynamics surrounding mineral exploitation in Mount Darwin. The study claims that while artisanal mining promotes economic growth, it also leads to environmental degradation, economic exploitation, and community marginalisation.

Conclusion

For many people in Mount Darwin, artisanal mining can provide a living if the challenges are addressed, Mukaradzi can become a more sustainable and viable source of income for rural communities by addressing the barriers to its sustainability and development. By employing strategies to overcome these barriers, artisanal mining can improve livelihoods and contribute to the region's economic

development and poverty reduction. This chapter has found that artisanal mining in Mukaradzi faces significant challenges, including limited access to resources, inadequate infrastructure, and social and cultural barriers. Despite these challenges, The industry has the ability to support regional sustainable development and the reduction of poverty in the region as it is the main source of livelihood for Mukaradzi community as they are able to go by on their day to day lives with artisanal mining as their source of income. The researcher has also found that technology has the potential to enhance productivity and sustainability in artisanal mining, but its effective use is constrained by several factors, including limited existing infrastructure, lack of monetary resources and gender inequalities. These findings highlight the need for a multi-stakeholder approach to address the challenges facing artisanal mining in Mukaradzi and harness the potential of technology to promote sustainable development and poverty alleviation.

CHAPTER 5: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

Using Mukaradzi in Mount Darwin district as a case study, this study uses a bottom-up methodology to examine the summary, conclusion, and recommendations based on the study's findings about how artisanal mining affects communities' ability to improve their standard of living. The objectives outlined in the first chapter of this study will be used to draw conclusions and make recommendations. These objectives include, examining the extent to which artisanal mining has improved livelihoods at Mukaradzi community in Mt Darwin, analysing the key challenges faced by artisanal miners in improving their livelihoods in Mukaradzi Community, Mt

Darwin District, exploring the dynamics surrounding the mineral exploitation in Mt Darwin and how it concurs with development, coming up with improved strategies or methods of helping artisanal miners in preserving their environment sustainably in Zimbabwe. By using these objectives as a guide, this chapter will summarize the key findings, draw conclusions, and make recommendations for policy, practice, and future research.

5.2 Summary and findings

The study looked at how artisanal mining can help communities' standard of living using Mukaradzi in Mt Darwin district as a case study. The findings revealed that artisanal mining has a significant positive impact on rural livelihoods, enabling community members to access basic necessities, improve their economic status, and enhance their food security and health. However, the study also identified several challenges facing artisanal mining communities, including limited access to technology and equipment, inadequate training and skills development, environmental degradation and health risks, limited market access and fluctuating prices, and conflicts with large-scale mining companies. This study is divided into five chapters and uses Mukaradzi in the Mount Darwin district as a case study to provide a thorough analysis of the effects of artisanal mining on enhancing community livelihoods.

Chapter 1 provides a comprehensive background to the study, outlining the context and significance of artisanal mining in Zimbabwe and the research rationale.

Chapter 2 presents a thorough literature review on artisanal mining, livelihoods, and sustainable development, highlighting the conceptual frameworks approaches that underpin the study.

Chapter 3 outlines the methodology, detailing the research design, research approach, total population in the research, sample procedures, data collection methods used to investigate the research questions.

Chapter 4 presents the quantitative and qualitative results of the study, including the findings, challenges faced and the dynamics surrounding their mineral exploitation.

Lastly, Chapter 5 discusses the results, drawing conclusions and making

recommendations for policy, practice, and future research. The chapter highlights the key findings, including the significant positive impacts of artisanal mining on livelihoods.

Overall, this study contributes to our understanding of the complex relationships between artisanal mining, livelihoods, and sustainable development, providing insights and recommendations for improving the lives of artisanal mining communities in Zimbabwe and beyond.

Findings

- The study found that artisanal mining has significantly improved livelihoods in Mukaradzi community, with 80% of respondents reporting an increase in income and employment opportunities, ability to meet basic needs and also improvement in the living standards of communities.
- The study identified limited access to technology and equipment, environmental degradation, health risks, and conflicts with large-scale mining companies as the key challenges faced by artisanal miners.
- The study found that mineral exploitation in Mt Darwin is characterized by a lack of regulation, conflicts over resources, and environmental degradation, which hinder sustainable development.

5.3 Conclusion of the findings

According to the research, artisanal mining affects the community's livelihoods in both positive and negative ways. While artisanal mining has brought economic benefits to the Mukaradzi community in terms of employment and income, it has also posed significant challenges to the environment and the well being of the community members. Therefore there is the need for implementation of sustainable mining practices to ensure long term improvement in the community s livelihoods.

5.4 Implementable recommendations

- **Regulation and Enforcement:** Implement and enforce regulations for artisanal mining activities to ensure sustainable practices, environmental protection, and

the safety of miners. This can include proper waste management, reforestation programs, and health and safety training for miners.

- **Community Engagement:** Involve the community members in decision-making processes related to mining activities to ensure their voices are heard and their concerns are addressed. This can help build trust, promote transparency, and foster sustainable development.
- **Alternative Livelihoods:** Support the diversification of livelihood options for community members beyond artisanal mining, such as agriculture, small-scale businesses, or vocational training programs. This can reduce dependency on mining activities and provide more stable income sources.
- **Environmental Rehabilitation:** Implement rehabilitation programs to restore areas affected by mining activities, such as reforestation, land reclamation, and water conservation measures. This can help mitigate the environmental impacts of artisanal mining and restore ecosystem services.
- **Capacity Building:** Provide training and capacity-building programs for miners on sustainable mining practices, environmental conservation, health and safety measures, and entrepreneurship skills. This can empower miners to adopt responsible practices and improve their overall well-being.
- **Collaboration and Partnerships:** Foster collaboration between government agencies, mining companies, non-governmental organizations, and community-based organizations to address the challenges associated with artisanal mining collectively. This can leverage resources, expertise, and support for sustainable development initiatives.
- **Monitoring and Evaluation:** Put in place systems to keep tabs on the developments of initiatives meant to lessen the detrimental effects of artisanal mining and enhance community livelihoods. Regular evaluation can help identify gaps, assess effectiveness, and guide future interventions.
- **Improve Access to Technology and Equipment:** Provide training and capacity building programs for artisanal miners on the use of modern technology and equipment

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APPENDIX II :QUESTIONNAIRE GUIDE

Dear Respondent

My name is Samukeliso Sharon Murindashiri and I am pursuing an undergraduate degree in Development Studies at Bindura University of Science Education. I am

carrying out a study on; The Impacts of Artisanal Mining in improving Livelihoods of Communities: The Case of Mukaradzi community, Mt Darwin District Zimbabwe.

We respectfully ask that you fill out this form. This questionnaire will only be used for academic purposes, and all information submitted will be kept private. You don't have to undersign your name, therefore your identity will remain anonymous. I would be grateful if you could help me finish this study.

Yours sincerely

S.Murindashiri

Tick the appropriate box or fill in the space provided

1. Age group (years)

<18	18-24	25-30	31-39	Above 40
[]	[]	[]	[]	[]

2. Gender

Male [] Female []

3. Education level

O' level	A' level	Certificate	Diploma	Degree	Post Graduate
[]	[]	[]	[]	[]	[]

4. Occupation

Farmers	Miners	Traders	Unemployed
[]	[]	[]	[]

Addressing the impacts of artisanal mining on improving livelihoods in the Mukaradzi community in Mt. Darwin District, Zimbabwe:

1. Do community members in Mukaradzi have difficulty accessing artisanal mining sites?

- Yes [], No []

2. Do people have to wait a long time to obtain mining permits or access mining activities?

- Yes [], No []

3. Do community members feel safe when engaging in artisanal mining activities?

- Yes [], No []

4. Do men and women feel their contributions in artisanal mining are equally respected?

- Yes [], No []

5. Are the financial returns from artisanal mining activities affordable and accessible for community members?

- Yes [], No []

6. Are community members able to understand and navigate the technical and regulatory aspects of artisanal mining?

- Yes [], No []

7. What are the biggest challenges community members in Mukaradzi face in participating in and benefiting from artisanal mining?

8. What could be done to improve experiences and opportunities in the artisanal mining sector for all community members in Mukaradzi?

9. How would you describe the overall quality of life and livelihood improvements for those able to participate in artisanal mining in the Mukaradzi community?

10. If you could change one thing about the artisanal mining sector in Mukaradzi to better support the community, what would it be?

11. How would you rate the overall impact of artisanal mining on improving livelihoods in the Mukaradzi community?

12. What are the different effects of the challenges faced by community members in accessing and benefiting from artisanal mining activities in Mukaradzi?

Okay, got it. Let's focus the questions on the impacts of artisanal mining on improving livelihoods in the Mukaradzi community in Mt. Darwin District, Zimbabwe, without specifying gender:

Effective measures put in place to help community members access and benefit from artisanal mining include the following:

Measure	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
Increasing training and support for the mining workforce helps overcome obstacles					
Ensuring equitable recognition and respect for community members' mining contributions					
Building infrastructure and facilities closer to mining sites reduces barriers to access					
Providing affordable mining equipment and licenses reduces financial barriers					

THE END

Thank you for participating in this study

APPENDIX III: FOCUS GROUP DISCUSSION GUIDE

Dear Respondent

My name is Samukeliso Sharon Murindashiri, and I am taking an undergraduate degree in Development Studies at Bindura University of Science Education. I am conducting a study titled "The Impacts of Artisanal Mining in improving Livelihoods of Communities: The Case of Mukaradzi community, Mt Darwin District Zimbabwe."

We kindly ask that you respond to this inquiry. This information will all be treated with the utmost confidentiality and used only for educational purposes. Your name won't need to be undersigned, therefore it won't be revealed. I would be appreciative of your help in completing this study.

Yours sincerely

S.Murindashiri

1. What are the main artisanal mining activities and minerals exploited in your community?
2. How accessible are the artisanal mining sites for community members?
3. What are the key challenges and barriers people face in participating in artisanal mining?
4. How do community members obtain the necessary permits, equipment, and resources for mining?
5. What are the dynamics and power structures surrounding mineral exploitation in the area?
6. In what ways has artisanal mining impacted household incomes and overall community well-being?
7. What types of support, resources, or interventions would help more community members access and benefit from artisanal mining?
8. In what ways could the technical, legal, and regulatory aspects of mining be made more transparent and understandable to the community?
9. What could be done to ensure more equitable participation, fair distribution of benefits, and inclusive governance surrounding mineral exploitation?

THE END

Thank you for participating in this study

APPENDIX IV: KEY INFORMANT INTERVIEW GUIDE

Dear Respondent

My name is Samukeliso Sharon Murindashiri, and I am taking an undergraduate degree in Development Studies at Bindura University of Science Education. I am conducting a study titled "The Impacts of Artisanal Mining in improving Livelihoods of Communities: The Case of Mukaradzi community, Mt Darwin District Zimbabwe."

We kindly ask that you respond to the inquiry. This will only be used for academic purposes, and all information will be kept completely confidential. Your identity will remain confidential since there is no need to undersign your name. I would be appreciative of your help in completing this study.

Yours sincerely

S. Murindashiri

Background and Context

1. Can you please share your role and involvement in the Mukaradzi community?
2. What are the main artisanal mining activities and minerals exploited in this area?
3. How long have artisanal mining operations been established in the community?
4. In what ways has artisanal mining impacted household incomes and overall community well-being?

5. How have the financial returns from artisanal mining affected the ability of community members to meet their basic needs and improve their living standards?
6. What are the different livelihood opportunities and income-generating activities that stem from artisanal mining in the community?
7. What are the key challenges and obstacles that community members face in accessing and participating in artisanal mining?
8. What are the dynamics and power structures that surround the exploitation of minerals in the Mukaradzi area?
9. What types of support, resources, or interventions would help more community members access and benefit from artisanal mining in a sustainable way?
10. What could be done to ensure more equitable participation, fair distribution of benefits, and inclusive governance surrounding mineral exploitation?

Thank you for participating in this study

THE END