

BINDURA UNIVERSITY OF SCIENCE EDUCATIONFACULTY OF COMMERCE

A WORKING MODEL FOR LEVERAGING MICROFINANCE TO SUPPORT THE SUSTAINABILITY OF SMALL-SCALE MINERS IN MUKARADZI, MT DARWIN, ZIMBABWE

BY

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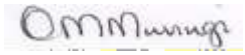
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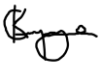
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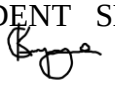
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DECLARATION

I**, Courage Kanyonganise,** Student Reg Number B232420B, do hereby declare that this dissertation is a result of my own investigation and research, except to the extent indicated in the acknowledgments, bibliography, references, and comments included in the body of the report, and that it has not been submitted in part or in full for any other degree to any other university.

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DEDICATION

To my late mother……

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ABSTRACT

Small-scale mining act a critical role in Zimbabwe's economy, leading to livelihoods, national revenue, and employment. However, the sector encounter important difficulties, comprising lack of formal support systems, unsustainable practices, and financial exclusion chiefly in areas like Mukaradzi, Mt Darwin. This study, titled A Working Model for Leveraging Microfinance to Support the Sustainability of Small-Scale Miners in Mukaradzi, Mt Darwin, Zimbabwe, reconnoiters how custom-made microfinance interferences can improve the functioning and livelihood sustainability of small-scale miners. Piloted by the constructivist paradigm, this research implemented a qualitative methodology to intensely understand the lived encounters of miners, their obstacles to financial insertion, and their perceptions on sustainable practices. Data were gathered through focus group discussions, observations, and interviews involving cooperative leaders, microfinance representatives, local policy makers, government officials, and miners. The study also betrothed in thematic analysis to categorise key derives and perceptions. Findings showed substantial obstacles encountered by miners, including irregular income streams, lack of financial literacy, and limited access to formal credit due to collateral requirements. These difficulties are intensified by derisory infrastructure and environmental dilapidation, which destabilise long-term sustainability. Equally, opportunities were seen in cooperative loaning models, informal savings patterns, and the incorporation of financial literacy courses into microfinance initiatives. The research also stressed the dire role of microfinance in allowing miners to obtain vital equipment, embrace safer practices, and expand their livelihoods. Centred on these findings, a working model was established to boost the effects of microfinance in the Mukaradzi small-scale mining community. The suggested model underlines integration of financial integration, capacity building programs, training programs, micro-insurance options, partnerships with cooperatives to reduce individual risks, flexible loan structures, and increase accessibility to funds. The study concludes that custom-made microfinance solutions can attend to key obstacles and reveal opportunities, promoting the operational and economic sustainability of small-scale miners whilst contributing to wider developmental goals. This research presents realistic suggestions for microfinance institutions, policymakers, and community leaders to collectively reinforce the small-scale mining sector, warranting its sustainability and assimilation into Zimbabwe's economic context.

Keywords: Small-scale mining, Zimbabwe economy, Mukaradzi, Mt Darwin, Microfinance, Local policy makers

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CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.0 Introduction

The small-scale mining sector in Mukaradzi, Mt. Darwin, Zimbabwe, presents a unique opportunity for economic empowerment, particularly for the youths in rural communities. In recent years, many individuals in that area rely on small-scale mining as a primary source of livelihood; however, they often encounter significant challenges that affect their sustainability and growth. These challenges include inadequate access to financial resources, and limited technical expertise, which create barriers to achieving socioeconomic stability. The lack of organized financial instruments, such as microfinancing, exacerbates these challenges, restricting the miners' ability to invest in better tools, skills development, and sustainable practices. Over the years, traditional financing sources such as banks have been failing to address these challenges faced by small scale miners, and the gap is widening even though micro finance are there since they are following path of other traditional means. By incorporating and pivoting microfinance strategies, this research aims to identify best practices that can mitigate the challenges faced by these miners, ultimately contributing to their economic empowerment and the overall development of the community. The study will uncover the nuances of the current operational landscape, providing insights into how microfinance initiatives can be tailored to meet the unique needs of small-scale miners.

The study uncovered foundational introduction to the study, including the background, problem statement, and purpose, along with the research objectives, questions, proposition, significance of the study, and contributions to knowledge. This structured approach clarifies the unique challenges faced by small-scale miners in Mukaradzi and demonstrates the transformative impact that microfinance can have on their pathways to economic sustainability.

1.1 Background of the Study

Globally, Small-scale mining has been a critical sector, providing livelihoods for millions of people. According to the World Bank (2020), this sector contributes significantly to the economies of developing countries, yet it often operates informally with limited access to financial services. It is estimated that at least 134 million people work in related industries that support the small-scale mining sector (World Bank 2019, 71). The Small-scale mining sector workers supply a wide

variety of minerals, in significant proportions, to the world's raw material volumes, minerals that are critical to modern communication technologies, low carbon and clean energy technologies (World Bank 2020), and luxury jewellery goods. It is worth noting that small-scale mineral production makes up 25 percent of total global diamond supply, 20 percent of the world's gold supply, and 80 percent of the world's sapphires. The small-scale mining sector also supplies 18-30 percent of the world's cobalt, a key battery metal powering the world's clean energy transition (OECD 2019).Despite these significant contributions to major global mineral supply chains, small-scale miners are some of the world's most marginalized workers, and their contribution to the global economy garners little attention.

In Southeast Asia, microfinance has been successfully integrated into small-scale mining to improve economic outcomes and promote sustainability (Smith & Johnson, 2019). According to Smith & Johnson (2019), microfinance was a catalyst for growth, bringing both economic benefits and sustainability improvements to the small-scale miners. The study illustrated that microfinance has provided critical financial resources to small-scale miners, enabling them to invest in better equipment and improve extraction techniques, with 70% of the surveyed miners reporting increased production levels after receiving microloans, with an average 30% increased production. The integration of microfinance led to 25% increased household incomes for miners who participated in microfinance programs.

In South America, small-scale miners in Peru faced several significant challenges that severely impacted their operations and economic viability which included lack of access to capital, poor safety standards, inefficient mining practices and environmental impact. Approximately 80% of small-scale miners relied on informal lending sources, which often charged exorbitant interest rates, sometimes exceeding 100% annually. This lack of access to formal financial services severely limited their ability to invest in better equipment and practices (Garcia et al., 2021). Furthermore, it was reported that over 50% of small-scale miners did not use any form of personal protective equipment (PPE), leading to high accident rates. The incidence of mining-related accidents accounted for 30% of injuries in mining operations, highlighting the urgent need for improved safety measures (Garcia et al., 2021). Many miners operated at less than 50% of their potential efficiency due to outdated and inefficient mining techniques. This inefficiency not only limited production but also contributed to environmental degradation (Garcia et al., 2021).

The initiatives in Peru have shown that microfinance can enhance miners' access to better equipment and safety measures (Garcia et al., 2021). Approximately 65% of the miners surveyed reported purchasing new equipment within the first year of receiving microloans, which led to a 40% increase in mining efficiency.

In Africa, small-scale mining is a significant economic activity. According to the African Development Bank (2022), it employs over 8 million people across the continent. However, the sector faces challenges such as lack of capital and formal financial support. In Ghana, microfinance institutions have begun to support small-scale miners, helping them formalize operations and improve productivity (Adjei & Mensah, 2020). It is estimated that around 60% of the miners who received microfinance assistance were able to register their businesses with the government, compared to only 20% prior to receiving support (Adjei & Mensah, 2020). With access to microfinance, many miners have invested in modern equipment and technology, leading to significant productivity improvements. According to Adjei & Mensah, (2020) there was an average increase in mineral output of 35% among miners who utilized microfinance services in Ghana. In Eastern Africa, Tanzania, microcredit schemes have been introduced to assist miners in accessing modern mining technologies (Mwangi, 2021).In Central Africa, The Democratic Republic of Congo has seen pilot projects where microfinance helps miners' transition to safer and more sustainable practices (Kabila & Tshibanda, 2023).

Southern Africa's small-scale mining sector is vital for regional economies. The small-scale mining sector contributes significantly to local economies by providing employment and supporting livelihoods. It is estimated that the sector employs over 1 million people acrossSouthern Africa, directly and indirectly (The World Bank, 2021). Despite its potential, the sector is underdeveloped primarily due to a lack of access to finance. The World Bank (2021) highlightedthat 70% of small-scale miners in the region reported difficulties in securing funding from traditional financial institutions. This restricts their ability to invest in better equipment, technology, and training. More so, Small-scale miners often operate informally, which leads to regulatory challenges and environmental degradation. The world bank indicated that over 60% of small-scale mining operations in Southern Africa are unregulated, contributing to poor practices that harm local ecosystems.

Zambia have had challenges as other countries when it comes to small scale mining, with challenges that ranges from lack of access to capital, outdated equipment and miners experiencing

safety and environmental concerns, Microfinance initiatives in Zambia have allowed miners to invest in better equipment, leading to increased productivity and reduced environmental impact (Chanda & Mulenga, 2022). Institutions such as Zambia National Commercial Bank (ZANACO) now offers tailored loans facilities for miners. FINCA Zambia provides microloans specifically designed for small-scale mining operations to boost their productivity.

In Zimbabwe, small-scale mining is a key contributor to the economy, especially in regions like Mashonaland and Matabeleland. According to the Ministry of Mines and Mining Development (2023), the sector faces challenges including access to finance and formal markets. Efforts in Mashonaland West have focused on integrating microfinance with local mining operations to improve miners' livelihoods and ensure environmental compliance (Ngwenya, 2022).In Matabeleland, microfinance projects are aimed at empowering women miners and promoting sustainable practices in gold mining (Dube & Ncube, 2021).The Ministry of Mines and Mining Development (2021) reported that over 500,000 Zimbabweans are engaged in small-scale mining activities, contributing substantially to the economy and providing essential raw materials to various industries.

Given the background above, microfinance has proved as an essential tool towards sustaining small scale miner globally, but the question has been that why has these communities remained poor? why do they fail to upscale production? Is it lack financial literacy? Is it about regulatory frameworks? Some scholars would say despite its potential, miners frequently lack access to financing options that can support the purchase of equipment, training on sustainable practices, and compliance with legal and environmental regulations. Microfinance can serve as a critical intervention by offering tailored financial products that address the specific needs of small-scale miners, enabling them to improve their operations and financial literacy. It is worth noting that despite the existence of various microfinance institutions (MFIs) in Zimbabwe, there remains a significant gap in understanding how these financial resources can be effectively utilized to sustain small-scale mining operations in Mukaradzi, Mt Darwin, which is a focal point for small-scale mining in Mashonaland Province. Therefore, it is under this background that study seeks to fill this gap by examining how microfinance can be structured to meet the diverse needs of miners and exploring the impact of these financial solutions on operational sustainability.

1.2 Statement of the Problem

Small-scale miners in this region face the problem of finance to sustain their businesses. This is caused by the limited access to financial resources necessary for sustaining and scaling their operations by investing in proper mining tools and skills. Without reliable funding, these miners often resort to substandard methods, which hinder productivity and expose them to considerable occupational risks. The lack of financial support also contributes to environmental degradation, as miners cannot afford to implement sustainable practices, leading to adverse impacts on local ecosystems and public health. The Zimbabwe Mining Newsletter (2020) revealed that the Ministry of Mines and Mining Technology in 2017 forfeited more than 1000 mining claims for ASSGM in Matabeleland North province, Zimbabwe because they have failed to pay US$ 100 for inspection fee during six months of starting operations. If this problem persists, many small-scale mines will close due to mine shaft collapse, killing masses, and further cause environmental degradation from siltation and deforestation as well as putting livestock and community health at risk due to use of mercury and cyanide. Addressing these challenges through targeted microfinance initiatives can foster economic growth, reduce poverty, and empower small-scale miners in Mukaradzi, creating a more sustainable and equitable mining ecosystem in the region.

1.3 Purpose of the Study

The primary purpose of this study is to come up with a structure that utilizes microfinance as a tool to strengthen the economic and environmental sustainability of small-scale mining (SSM) operations in Mukaradzi, Zimbabwe. The goal of the research to explore how microfinance can contribute to small-scale miners by availing financial resources, which allows them to enhance productivity, embrace safer, additional sustainable usages, and decrease interdependency on informal creditors who often escapade miners. In addition, the research will investigate the distinct financial, and functional objections faced by small-scale miners in Mukaradzi, offering a tailored microfinance framework that concede the specific needs and restrictions of these miners. Ultimately, the research aims to add to ample perspective on financial inclusion and sustainable development in the mining sector, specifically within resource-clinging and economically susceptible communities in Zimbabwe.

1.4 Research Objectives

a) To identify the specific financial and operational challenges faced by small-scale miners in Mukaradzi.
b) To determine the current state of microfinance initiatives catering to small-scale miners and assess their effectiveness.
c) To propose a tailored microfinance model that addresses the financial needs of small-scale miners in Mukaradzi, fostering sustainable practices.

1.5 Research Questions

a) What are the specific financial and operational challenges faced by small-scale miners in Mukaradzi?
b) How effective are current microfinance initiatives in addressing the needs of small-scale miners?
c) What components should a tailored microfinance model include to effectively support the sustainability of small-scale mining operations in Mukaradzi?

1.6 Proposition of the study

Microfinance initiatives currently available do not significantly enhance the environmental, economic sustainability and operational efficiency of small-scale miners in Mukaradzi. This proposition affirm that initiating microfinance does not guide to calculable improvements in key sustainability index, like income stability, productivity, enactment of safer and more environmentally amiable practices, or abatement in dependency on informal credit sources. This study ought to involve appraising the distinctness between miners who have access to microfinance and those who do not, investigating variables like income growth, environmental impact, loan repayment behaviour, and equipment quality.

1.7 Significance of the Study

1.7.0 To the Small-scale miners

This study aims to empower small-scale miners in Mukaradzi, Mt Darwin, by providing access to microfinance solutions that are tailored to their specific needs. By facilitating financial support,

the research seeks to enhance their livelihoods, improve operational efficiency, and promote sustainable mining practices.

1.7.1 To the Bindura University of Science Education

The research will address existing gaps in the literature regarding microfinance and small-scale mining in Zimbabwe. It aims to contribute valuable insights into how financial mechanisms can support sustainable livelihoods in rural communities, thereby enriching academic discourse and fostering further research in this area.

1.7.2 To the Researcher

Conducting this study will broaden the researcher's understanding of microfinance as a financing option and its impact on small-scale miners in Zimbabwe. It will provide practical knowledge and insights that can be applied in future research endeavours or professional contexts related to finance and rural development.

1.7.3 To the Community

Empowering small-scale miners through microfinance access and training initiatives will stimulate local economic growth, enhance household incomes, and promote overall community development in Mukaradzi. This research can serve as a catalyst for community engagement and collaborative efforts to address local challenges and national challenges.

1.7.4 To Microfinance Institutions

The study will provide microfinance institutions (MFIs) with crucial insights into the specific needs and challenges faced by small-scale miners. This understanding will enable MFIs to design more relevant and accessible financial products that promotes their sustainability, allowing them to grow, ultimately fostering a stronger relationship between MFIs and the small-scale mining sector.

1.7.5 To Policymakers

The research will deliver empirical insights that can guide policymakers in crafting effective policies to support the small-scale mining sector. It will highlight the importance of access to finance and capacity-building initiatives, ensuring that policies are informed by the realities faced by small-scale miners in Zimbabwe.

1.8 Delimitations/Scope of the Study

This study will focus exclusively on small-scale miners operating in Mukaradzi, thereby excluding those in large-scale mining and other geographic areas. The main reason for choosing Mukaradzi is because it is the biggest small-scale mining hub in Mt Darwin over other areas in the region. The study will focus only those who are in gold mining thereby excluding all other minerals. The research will concentrate specifically on microfinance and its impact on sustainability of small-scale miners, rather than on broader aspects of small-scale mining.

1.9 Limitations of the Study

The study will partially rely on self-reported data from participants, which may introduce biases regarding their perceptions of financial access and challenges. To mitigate this limitation, the research will include mixed methods, such as surveys and interviews, to ensure diverse perspectives. The study will also be limited by the lack of technical knowhow of microfinance amongst participants as some participants do not understand what they are and how they work. To mitigate this limitation, the researcher will explain a brief background of microfinance institutions to the participants before asking how they have been working with them to get the correct responses from knowledgeable perspectives.

1.10 Summary of Chapter One

The chapter introduced the study on leveraging microfinance to enhance the sustainability of small-scale miners in Mukaradzi, Mt. Darwin, Zimbabwe. It outlines the economic significance of small-scale mining, the challenges miners face due to limited access to financial resources, and the negative impacts on productivity and the environment. The chapter details the purpose of the study, which is to develop a tailored microfinance model, and presents research objectives, questions, and hypotheses. Additionally, it highlights the significance of the study for various stakeholders, including the small-scale miners, academic institutions, and policymakers, while addressing the scope and limitations of the research. Overall, the chapter lays the groundwork for understanding how microfinance can support the livelihoods of small-scale miners in the Mukaradzi area. The next chapter will look at the literature review.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.0 Introduction

The previous Chapter introduced the study on leveraging microfinance to enhance the sustainability of small-scale miners in Mukaradzi, Mt. Darwin. The chapter detailed the purpose of the study, and presented research objectives, and hypotheses. Additionally, it highlighted the significance of the study for various stakeholders, while addressing the scope and limitations of the research. This chapter will examine existing literature on microfinance and small-scale mining. It will look at the general literature, theoretical literature, conceptual framework, empirical literature review and the research gap, and analyse case studies of successful models that support sustainable practices through financial interventions. The relationship between microfinance and sustainable development in small-scale mining has garnered attention in recent years. This literature review aims to synthesize existing research, identify theoretical frameworks, and highlight the knowledge gaps relevant to the study of microfinance's impact on the sustainability of small-scale miners in Mukaradzi, Mt Darwin, Zimbabwe.

Historically, microfinance has been rooted in the concept of providing financial services to underserved populations. Pioneering work by Muhammad Yunus in the 1970s laid the groundwork for microcredit to alleviate poverty. Yunus (1999) emphasized that small loans could empower individuals to start businesses, thus improving their economic conditions. Early studies, such as those by Ledgerwood (1999), highlighted how microfinance enhances access to capital for small enterprises, enabling investments in equipment and operational improvements crucial for miners. Research by Khandker (2003) showed that microfinance not only improves financial access but also fosters social empowerment, particularly among women, who play a vital role in small-scale mining. Microfinance has been recognized as a powerful tool for enhancing financial inclusion among marginalized communities, including small-scale miners. According to Ledgerwood (1999), microfinance provides financial services to those who typically lack access to traditional banking systems, enabling them to invest in their businesses and improve their livelihoods.

Research by Khandker (2003) indicates that microfinance significantly improves access to capital for small-scale enterprises, which can be crucial for miners needing to upgrade their equipment or adopt safer practices. A study by Morduch (1999) found that microfinance contributes to economic resilience by allowing small-scale entrepreneurs to diversify their income sources, thus reducing vulnerability to market fluctuations.

2.0.1 Contemporary Understanding of Sustainability in Small-Scale Mining

In recent years, the focus has shifted toward integrating sustainability into small-scale mining practices. The International Council on Mining and Metals (ICMM, 2012) emphasizes sustainable mining as essential for long-term sector viability. Contemporary literature increasingly links financial resources to sustainable practice. Recent studies, such as those by Hilson (2002), outline the environmental challenges faced by small-scale miners, including land degradation and pollution. Access to microfinance is positioned as a key enabler for adopting environmentally friendly technologies and practices. The World Bank (2021) has underscored the importance of financial inclusion for fostering social equity in mining communities. Access to microfinance can empower marginalized groups, particularly women, to engage more actively in sustainable mining practices. Sustainability in mining refers to practices that minimize environmental impact while maximizing social and economic benefits. The International Council on Mining and Metals (ICMM, 2012) emphasizes that sustainable mining practices are essential for the long-term viability of the sector. Research by Hilson (2002) highlights the environmental degradation associated with small-scale mining, such as deforestation and soil erosion. Financial resources are necessary for implementing practices that mitigate these impacts. Gender equity is often overlooked in mining. According to a report by the World Bank (2021), access to microfinance can empower women in mining, promoting social equity and improving community outcomes.

2.1 Microfinance

Microfinance is the provision of financial services to low-income clients, including microloans, savings, and insurance, aimed at promoting financial inclusion. (Woller & Woodworth (2020). The goal is to promote financial inclusion amongst marginalized communities and empower them.For instance, in Sub-Saharan Africa, microfinance programs and institutions provide small loans to women entrepreneurs to start local businesses, contributing to economic development and gender equality.

According to Ledgerwood (2018) microfinance refers to the provision of a broad range of financial services to low-income individuals and households who are traditionally excluded from the financial system. He went on to argue that microfinance offers not only credit but also savings, insurance, and remittance services. This can be witnessed in rural Southeast Asia where a microfinance institution offers training alongside loans, enabling local farmers to adopt better agricultural practices and improve their yield.

In Zimbabwe microfinance has played a pivotal role in raising community standards, assisting SMEs accessing financial capital to boost production. They have also been influential in assisting these SMEs in times of disasters. Recently, one Microfinance institution, Money Mart Finance Ltd assisted the Mbare inferno affected business owners by writing their loans off and offering zero based interest loans as backup to resuscitate their businesses. These shows that microfinance can be influential in raising community standards leading to a rise in the country's gross domestic product, GDP.

In summary ,in the industry of mining, Microfinance can play a role in assisting small scale miners access to financial capital to buy proper equipment , invest in necessary tools and skills that are both technologically advanced and environmental friendly which will improve their production capacities, afford safe mining practices and enhance community improvement as concurred Morduch (2019).

2.1.1 Background of Microfinance

Microfinance has evolved significantly since its inception, emerging as a crucial tool for economic development and poverty alleviation. The concept of microfinance can be traced back to the 19th century with the establishment of cooperative banks in Europe, aimed at providing financial services to the rural poor. Notable figures like Friedrich Wilhelm Raiffeisen in Germany laid the groundwork for cooperative lending systems that would later influence microfinance practices globally. The modern microfinance movement began in the 1970s, with notable microfinance companies like BRAC, founded in 1972 in Bangladesh by Fazle Hasan Abed. BRAC is one of the largest non-governmental development organizations in the world which offers a range of services, including microfinance, health care, education, and social development. BRAC's microfinance program provides loans to low-income individuals, particularly women to this date. The initiative has significantly improved the livelihoods of its clients, helping them start small businesses and invest in education. In 1983, Muhammed Yunus in Bangladesh founded Grameen Bank which

provided small loans to impoverished individuals without requiring collateral. This model demonstrated that the poor could be reliable borrowers, challenging traditional banking assumptions about creditworthiness.

Following these successes, microfinance expanded rapidly across developing countries. By the 1990s, various microfinance institutions (MFIs) emerged worldwide, offering a range of financial services, including savings, insurance, and remittances, in addition to microloans. This expansion was driven by the recognition of microfinance as a viable strategy for poverty alleviation and economic empowerment (Wesya & Mwakalobo :2023). Launched in 2005, Kiva, a non-profit organization that connects lenders with entrepreneurs through an online platform allowed individuals to lend money to people in developing countries. Kiva has successfully facilitated millions in loans to small business owners and farmers. The crowdfunding model enables individuals to support specific projects, fostering global connections and community support. Kiva's success lies in its ability to harness the power of micro-lending through the internet.

The COVID-19 pandemic highlighted the vulnerabilities of low-income populations and the critical role of microfinance in crisis response. MFIs adapted by offering flexible repayment options and emergency loans to help clients navigate economic hardships. Studies indicate that microfinance could play a vital role in recovery efforts by supporting small businesses and fostering resilience in communities. In recent years the advent of digital technology has transformed the microfinance landscape. Mobile banking and fintech solutions have made it easier for MFIs to reach underserved populations, reduce transaction costs, and enhance service delivery. For example, digital platforms allow clients to access loans and manage their finances through mobile applications, significantly increasing financial inclusion.

According to Pluskota (2021), microfinance continues to play a conforming role by prolonging credit to borrowers who were denied credit by banks due to high risks. Kumari (2020) noted that microfinance institutions offer loans with low-interest rates, offering credit on a group basis and loans for SME development. The aim of microfinance is to eradicate the gap created by formal banks through the provision of external sources of funds by offering loans to those lacking proper credit history documentation and collateral. Their significant role is to mitigate the effects of the financial crisis being faced by SMEs. Rajapakshe (2021) states that Microfinance has been defined as the most relevant tool for contending poverty by providing poor people with a wide range of financial services. The main agenda is to assist SMEs, International J. of Management,

Entrepreneurship, Social Science and Humanities with small loans to develop their businesses. According to Hussen et al. (2021), MFIs provide funding to SMEs through loan recycling, ensuring that they grow. It is known for providing credit to all people. According to Sultakeev et al. (2018), most successful small- to medium-sized entrepreneurs depend on the loans that they are being granted by MFIs.

Overall, microfinance has come a long way since its inception, evolving into a multifaceted approach to financial inclusion and poverty alleviation. With ongoing innovations and a focus on sustainability of firms, microfinance continues to adapt to the changing needs of low-income populations worldwide.

2.1.2 The effects of Microfinance

Microfinance has a lot of effects in local economies. The effects can be summarised in the table below.

Fig 1: Effects of Microfinance

AUTHOR	EFFECTS
Bapolisi, S. et al. (2024)	Poverty Alleviation "Microfinance has been shown to significantly reduce poverty levels among participants, providing them with the necessary capital to improve their livelihoods."
Cruz Rambaud, S. et al. (2022)	Empowerment of Women "Microfinance initiatives targeting women have led to increased decision-making power and improved socio-economic status within households."
Rokhim, R. et al. (2023)	Job Creation "Microfinance programs have been instrumental in creating jobs by enabling entrepreneurs to start and expand their businesses."

Tanin, A. et al. (2024)	Financial Inclusion: "Microfinance plays a crucial role in enhancing financial inclusion by providing access to financial services for the unbanked population."
Eikelenboom, M. et al. (2024)	Community Development: "Microfinance fosters community development by building social networks and enhancing collective efficacy among borrowers."
Lopatta, K., et al. (2024).	Over-indebtedness "Despite its benefits, microfinance faces criticism for potential mission drift and the risk of over-indebtedness among borrowers."
Ferilli, G. et al. (2024)	Improved Service Delivery "Increased competition in the microfinance sector has led to improved service delivery and lower costs for clients."
Author: Akter, S. et al. (2020)	Improved Savings Behavior "Microfinance programs encourage savings behaviour among clients, leading to better financial management and security."
García-Pérez, I. et al. (2024)	Education Improvement "Access to microfinance has been linked to increased educational expenditures, particularly for girls, enhancing their future opportunities."

: Spaggiari, S. et al. (2024)	Health Outcomes: "Microfinance can improve health outcomes by enabling clients to afford healthcare services and invest in better nutrition."
Gashayie, T. & Singh, A. (2024)	Resilience to Economic Shocks: "Microfinance enhances household resilience to economic shocks by providing access to credit and savings."
Christens, B. D. (2024)	Social Capital Development: "Microfinance enhances social capital by fostering networks among borrowers, which can lead to improved community support systems."
Marconatto, J. et al. (2024)	Reduction of Informal Lending: "Microfinance reduces reliance on informal lending sources, which often charge exorbitant interest rates, thus protecting borrowers from exploitative practices."
Coronel-Pangol, J. et al. (2023)	Encouragement of Entrepreneurship: "Microfinance fosters entrepreneurship by providing necessary capital and resources, leading to innovation and economic dynamism."
Hermes, N. & Lensink, R. (2024)	Boosting Local Economies: "Microfinance has the potential to stimulate local economies by increasing household income and spending, which in turn boosts demand for local goods and services."

2.3 Small Scale Miners

2.3.1. Introduction to Small-Scale Mining in Zimbabwe

Small-scale mining (SSM) is a remarkable economic activity in Zimbabwe, furnishing livelihood hundreds of thousands of Zimbabweans and promoting substantially to the country's gold production. SSM in Zimbabwe is characterized by its low levels of mechanization, informal nature, and high labour intensity. It is primarily undertaken by small groups or individuals which includes artisanal mining, which is often defined by embryonic extraction methods and limited technical skills (Hilson & Maponga,2004). Spiegel (2009) alludes that the sector produces a variety of minerals, with gold being the most significant due to its contribution to the national economy and export revenues.

The SSM's significance has grown over the past decades, not only as a means of begetting income for individuals who may lack formal employment but also as a prospective enhancer to rural development. The Zimbabwe's rich mineral resources have supported the growth of small-scale operations, in areas like Gwanda, Mt Darwin, and Mazowe. Amongst these, the Mukaradzi area in Mt. Darwin stands out for its small-scale gold mining activities, which have become a critical livelihood source for local communities (Mawowa, 2013).Nevertheless , SSM has its multiple challenges, which are not limited to environmental degradation ,health risks, and most importantly financial constraints, thus calling for an urgent need for sustainable models to support its development.

2.3.2 Pre-Colonial Mining Practices and Indigenous Knowledge

Small-scale mining in Zimbabwe dates to the pre-colonial era. Long before European colonization, indigenous communities were diligently bound in mining, particularly in the extraction of copper, gold, and iron. These minerals played a pivotal role in local economies, both for domestic use and trade with neighbouring regions. According to Pwiti and Soper (1996) archaeological evidence denotes that ancient Zimbabweans developed sophisticated mining and metallurgical techniques, which allowed them to extract, smelt, and mould metals. Beach (1998) has it that important precolonial mining activities are well curated in areas like Mutapa Kingdom and Great Zimbabwe

whereby communities mined gold for ornaments creation and trading networks as far as the Indian Ocean coast. The indigenous mining knowledge shows that small-scale mining was a critical part of early economic systems, with techniques passed down through generations. Despite its significance it is paramount to note that these indigenous practices were largely abandoned following colonization, with the introduction of large-scale mining operations that preferred commercial extraction over small-scale indigenous mining by European settlers.

2.3.3 Colonial Era and the Marginalization of Indigenous Miners

It was during the British colonial period in the late 19th and early 20th centuries, where small-scale mining shifted significantly to new regulatory and land ownership systems that confined indigenous mining activities. Colonial jurisdiction prioritized large-scale mining operations, often run by European settlers, who were given considerable mining rights and financial support. Colonial laws Maponga and Ngorima (2003) says that colonial laws limited indigenous access to profitable mining areas and enforced regulations that made it difficult for local miners to run legally. Adding on, the restrictions were evidenced in the Mines and Minerals Act of the early 1900s limited indigenous participation in mining, leading many to leave the activity or move to marginal, less lucrative sites. Zimbabwe's mining sector was dominated by the European mining companies yanking invaluable resources that were exported predominantly to European markets. Phimister (1976) cement that indigenous miners were further excluded through land policies and high taxation that displaced communities from mineral-rich areas. As a result, small-scale mining became largely informal, lacking investment and technical support with indigenous miners forced into furtive operations outside of the colonial regulatory framework thus setting the stage for challenges that persist to this day.

2.3.4 Post-Independence Developments and the Growth of SSM

Following Zimbabwe's independence in 1980, the government began to discern small-scale mining as an embryonic l driver of poverty alleviation and economic development. The new government desired to empower indigenous Zimbabweans by making more equitable economic policies. Regardless of these intentions, SSM initially continued to be largely informal, due limitedtechnical and financial support (Kamete, 2008).Therefore it is key to note that with continued economic hardships in Zimbabwe in the 1990s, particularly with the adoption of Structural Adjustment Programs (SAPs), many people who lost formal employment turned to small-scale mining as a source of income (Hilson & Maponga, 2004).Furthermore, during this period SSM

activities grew in haste , especially in rural areas, as mining became a crucial livelihood strategy. The sector furnished employment for those affected by economic realignment and became progressively significant for communities with curbed to formal economic opportunities. Even so, these SSM activities often lacked precept, and informal mining practices remained incessant creating safety and environmental concerns.

2.3.5 2000s Economic Crisis and Small-Scale Mining Expansion

In the 2000s Zimbabwe underwent an economic crisis characterized by currency instability, a shrinking formal job market, and hyperinflation. These economic coercions drove even more Zimbabweans to engross in small-scale mining, specifically in gold extraction, as a coping strategy. In the bid to recognize the need for foreign currency, the government sought tostandardize the sector by introducing the 2006 Indigenization and Economic Empowerment Act, which aimed to increase control of natural resources and local ownership (Mawowa, 2013). This policy shift inspired local participation in mining, but many small-scale miners repeatedly to operate informally due to obstruction in the legal registration process. In contempt of these formalisation efforts, most small-scale miners lacked access to modern equipment, technical expertise, and financing support which limited their productivity and accelerated environmental and health risks. To address these issues, the Zimbabwean government managed to partner with organizations like the Zimbabwe Miners Federation (ZMF) to provide training ,technical supportand gold-buying facilities, yet progress has been varied due to persistent informal practices and limited resources(Spiegel, 2009).

2.3.6 Current Status and Significance of SSM in Zimbabwe

Today, SSM remains an integral part of Zimbabwe's mining industry, specifically in terms of gold production. In 2020, the sector presented over 60% of the country’s gold output, accentuating its role in foreign currency creation and economic potency (Reserve Bank of Zimbabwe, 2021). Mukono(2020) states that the Reserve Bank of Zimbabwe has implemented policies, such as the formation of gold-buying centres in rural areas, to regularize and consolidate SSM operations, restrain smuggling, and advance the sector’s input to the national economy. Additionally, the Zimbabwe Miners Federation (ZMF) has been working intently with the government to give training and technical support to small-scale miners, especially around safety and environmental management.

Regardless of these attempts, the sector continues to be largely informal and faces notable challenges. Many small-scale miners persist to work without licenses due to regulatory and financial barriers in the standardization process (Mutemeri et al., 2016). Health risk, environmental degradation and insufficient access to financial resources continue to inhibit the sector's sustainability, emphasizing the need for a model that could sufficiently support small-scale miners in regions like Mukaradzi. In this context, microfinance emerges as a potential tool, that can provide miners with essential capital to improve environmental practices, invest in equipment, and adhere to safety regulations, while promoting the long-term sustainability of their operations.

The historical progression of small-scale mining in Zimbabwe accentuate the sector's tenacity and compliancy through vital economic and political shifts. Originating from indigenous knowledge systems to colonial bounds and post-independence challenges, SSM has played a significant role in Zimbabwe's economic and social fabric. As the sector continues to grow, coping with its distinct needs through pestered support, including microfinance solutions, could facilitate sustainable growth and standardization, serving both miners and the broader economy.

2.3.7 Economic significance of Small -Scale Mining in Zimbabwe

Small-scale mining (SSM) plays a vital role in the economy of Zimbabwe's, most importantly contributing to foreign exchange earnings, poverty alleviation and employment creation particularly in rural areas. The sector is recognized as a lifeline for many Zimbabweans, it has notable substantial growth over the past two decades due to economic constraints and lack of formal employment possibilities. SSM, especially in the gold mining sector, has surfaced as a driving force of the economy with far-reaching concussion on both individual subsistence and national economic adherence.

Firstly, Small-scale mining is a major source of job creating in Zimbabwe, furnishing livelihoods for an estimated 500,000 people, with many more diffusely dependent on the sector (Spiegel, 2009). For example, in rural areas like Gwanda, Mazowe, and Mt. Darwin (which includes Mukaradzi), SSM has become an indispensable income source. Due to minimal formal employment possibilities, especially amidst Zimbabwe's economic challenges, many individuals and families depend on small-scale mining to bolster their livelihoods. The sector also administers jobs in related industries, including equipment supply, transport, and gold processing, intensifying its economic potency. Many Zimbabweans have swirled to small-scale mining as a retort to economic challenges, including declining agricultural productivity due to climate change and

rising unemployment's has become specifically crucial for the youth, who face high unemployment appraises. It offers a feasible income source, although in a largely informal setting, allowing individuals to acquire a living wage. This sector's beneficence to employment positively affected poverty reduction efforts in oppressed regions (Hilson & Garforth, 2012). For instance, in Mukaradzi, Mt. Darwin, small-scale gold mining has provided employment for residents and migrants alike, contributing to regional economic stability.

Another significant contribution of small-scale mining to the economy of Zimbabwe is its function in gold production, which is a dominant foreign exchange earner for the country. According to Reserve Bank of Zimbabwe (2021) small-scale miners have aided over 60% of Zimbabwe's annual gold output in the recent years. This benefaction has been essential in preserving the country's foreign currency reserves, given that Zimbabwe's other export industries have faced relentless challenges. Gold produced by small-scale miners is bought by the central government through the Fidelity Printers and Refiners, which then exports it to international markets to sustain the economy of Zimbabwe.

The significance of SSM for foreign exchange became particularly distinct during Zimbabwe's economic crisis in the 2000s, when currency devaluation and hyperinflation crippled formal economic sectors (Mawowa, 2013). As large-scale mining activities decreased output or shut down, the informal small-scale mining sector became a central source of foreign currency. This sector's suppleness and capability to produce gold even during economic recession have established it as a strategic asset for Zimbabwe. In recent years, the government has set up gold-buying centers in mining hotspots such as Mukaradzi, encouraging small-scale miners to sell their gold legally and enhancing formal foreign currency inflows (Mukono, 2020).

Adding on, SSM have made considerable impact on poverty alleviation, mainly in rural areas where poverty levels are often high. By furnishing income-generating opportunities, SSM helps curtail poverty and promoting rural economies. For instance, the money earned by small-scale miners is often reinstated in local businesses, creating a chain reaction that benefits the wider community. Chimonyo et al (2021) adds that the sector has assisted in poverty reduction in regions like Mt. Darwin, where other economic opportunities are limited. The reappointment of mining proceeds into local economies assist auxiliary businesses such as equipment suppliers, housing construction and food vendors fostering community development.

Additionally, some small-scale miners have used their wages to improve their access to healthcare, households, invest in children's education, which assist to uplift entire families and communities. For instance, Hilton (2016) alluded that studies have revealed that in rural mining areas, families with miners afford schooling their children by far as compared to non-mining households, thus facilitating long-term socio-economic improvements. This income circulation within local economies enhances rural development by boosting the demand for goods and services, creating a more resilient economic environment. Therefore, clearly stipulating the significance of SSMs to the economy of Zimbabwe.

Furthermore, small-scale mining contributes to government revenue, although less directly than large-scale operations, due to the high informality of the sector. However, regulatory efforts have been built up in recent years, with the government pursuing to rationalize SSM and substantiate that miners contribute to royalties and taxes. As proof, the enactment of the Zimbabwe Miners Federation (ZMF) has helped sustain a formal structure for the sector and works closely with the government to execute training and regularization measures. This attempt seeks to accelerate tax compliance and, subsequently, government revenue (Mutemeri et al., 2016). Moreover, the government has introduced stimulus to cheer up small-scale miners to sell their gold through formal channels. These efforts include establishing accessible buying centres to counteract illegal trading and smuggling, favourable pricing policies which have been crucial issues due to informal market dynamics. Mawowa (2013) add that the formalization of the sector aided the government to regulate and support sustainable practices. Thereby increasing economic contributions and environmental management within the sector.

Therefore, the sector is fundamental to Zimbabwe’s economy, with notable contributions to foreign exchange wages, employment, rural development, and poverty alleviation. The sector’s persistency has made it an integral part of the economy, especially during economic crisis and it has become a key stream for rural income generation. However, formalizing and aiding this sector is captious to enhance its contributions while mitigating social impacts and negative environmental .The development of financial tools such as microfinance can further sustain miners, especially in areas like Mukaradzi, thus enabling them to operate sustainably and contribute to Zimbabwe’s economic resilience.

2.4.0 Microfinance in Resource-Based Communities in Africa

Microfinance has surfaced as an essential tool for enabling communities in resource-rich regions across Africa. While large-scale elicit activities often influence the economies of these areas, small-scale operators in sectors such as agriculture, mining, and forestry face barriers to accessing traditional financial services. Microfinance enables these operators with necessary financial resources, facilitating poverty alleviation, economic resilience, and sustainable development. This literature review explores empirical studies on the impact, challenges, and outcomes of microfinance initiatives within resource-based communities across Africa, with an emphasis on case studies from Zimbabwe, Ghana, Sierra Leone, and Tanzania.

It is key to note that microfinance has been shown to ameliorate poverty by providing financial services customised to the needs of people engaged in small-scale resource extraction activities, such as artisanal and small-scale mining (ASM). In Ghana, where the ASM sector is both a vital livelihood source and a driver of environmental degradation, microfinance has been detrimental towards improving miners' operations. A study by Hilson and Ackah-Baidoo (2011) found that microloans helped small-scale miners to capitalize in safer and more proficient equipment, which lessened accidents and enhance productivity. This not only elevate miners' incomes but also positively affected the local economy by prolific additional employment opportunities.

Similarly, in Zimbabwe, microfinance has been used to bolster small-scale gold miners, peculiarly during economic downturns. Given the defined access to formal finance, small loans provide miners with funds to obtain basic equipment and manage operational costs. A case study by Chimonyo and Mabhena (2021) in Zimbabwe's Mt. Darwin region found that miners an average of 30% of miners accessed microfinance services improved their earnings which was reinstated into local businesses and household needs. Such findings show microfinance's role in optimizing economic vulnerability and enhancing self-subsistence in marginalized communities depending on natural resources.

Additionally, is of paramount importance to highlight that access to formal financial services in remote areas remains limited in many African resource-based communities. Microfinance connect this gap by providing financial services to individuals who ordinarily lack collateral or credit history. In Tanzania, where gold mining is a dominant activity in rural communities, microfinance institutions (MFIs) have helped lessen financial constraints among small-scale miners. Fisher and Naidoo (2016:12) report that "microfinance services expanded financial inclusion by offering loan

products that do not require traditional collateral, which most miners cannot provide." These loans helped miners to expand their income-generating activities, thus decreasing their reliance on mining alone.

Further evidence of the relevance of microfinance in promoting financial inclusion is seen in Sierra Leone, where diamond mining communities are widespread. McFarlane and Silverman (2015) analysed the impact of a microfinance project implemented by the African Development Bank (AfDB) and found that it profoundly diversified financial inclusion among small-scale miners. The project enabled these miners to have savings and manage their wages more effectually, making a culture of financial management that expanded beyond mining operations to other aspects of their lives. As a result, financial insertion enterprise through microfinance have the capability to build financial suppleness and promote living standards in resource-based communities.

While resource-based communities often ail from environmental degradation due to extrication activities, microfinance can help sustainability by promoting responsible practices. In Ghana some MFIs have organized loans to encourage eco-friendly mining practices. A study by Tschakert and Singha (2007) found that when microloans were attached to observance with environmental standards, small-scale miners were more likely to embrace sustainable methods, like using mercury-free processing techniques. Thus, dual approach of environmental accountability and financial support not only decreased ecological harm but also enriched miners' social standing and acceptance within their communities.

More so, in Tanzania, microfinance likewise been used to boost sustainable land-use practices in areas affected by mining. Through a program coordinated by the Tanzania Mining and Environment Project (TMEP), small-scale miners were rendered financial and technical support conditioned upon their engagement to rehabilitation activities, like waste management and reforestation (Mutemeri&Petersen,2018).Thereby demonstrating that with adequate financial backing, resource-based communities could develop towards more sustainable practices, thus establishing the lastingness of both the environment and their livelihoods.

Regardless of these achievements, microfinance faces distinct defiance in resource-based communities. Elusive income diminished financial literacy, and high-risk renting conditions can erode microfinance's impact. In Ghana, Hilson and Banchirigah (2009) ascertained that the periodic nature of mining wages often makes loan tendering challenges, as miners' income vary with mineral prices and availability. This asymmetrical income can lead to high renege rates

among small-scale miners, causing a risk to MFIs that lack systems to manage the financial instability associated with extractive activities. Additionally, financial literacy remains low in many resource-based communities, impacting debtor's capacity to manage loans successfully. In Sierra Leone, despite the AfDB's efforts to provide microloans to diamond miners, minimal mastery of loan terms led to issues with loan dearth and exploitation of funds (McFarlane & Silverman, 2015). Such setbacks emphasise the need for MFIs to accommodate financial education into their services, making sure that loanee's understand loan requirements and repayment agreements.

2.4.1 *Case Studies for Microfinance in Resource-Based Communities*

Ghana's small-scale gold mining sector has profited significantly from microfinance. The country's bureaucratic framework has progressively supported ASM through MFIs that tailor their products to miners' distinct needs. For example, Banerjee et al. (2015) assessed the effects of microloans on Ghanaian gold miners in the Western Region, finding that access to credit authorize miners to boost their productiveness by purchasing advanced mining tools. Moreover, miners who received microloans disclosed higher income adherence and bettered welfare due to boost productivity, though challenges like loan defaults and minimal savings capacity persisted.

In Tanzania, the artisanal mining sector has seen transformative impacts through microfinance interventions, especially in the Geita and Mwanza regions, known for gold mining. The Tanzania Women Miners Association (TAWOMA) collaborated with microfinance institutions to provide women miners with credit and business training. Hinton, Veiga, and Beinhoff (2003) report that these interference not only empowered women miners but also encouraged economic multiplicity, with many women investing in additional businesses like trade and agriculture. This heterogeneity contributed to more springy livelihoods and decreased reliance on mining alone.

In Sierra Leone, diamond mining communities have been beneficiaries of microfinance through programmes aimed at economic vulnerability reduction. The African Development Bank (AfDB) launched a microfinance initiative particularly focusing on these miners, to enhance financial solidity in communities impacted by the expansive diamond industry. According to research by McFarlane and Silverman (2015), the programme ameliorated miners' economic pliability by bringing financial training alongside credit. However, the progress of these initiatives wasinhibited by the lack of an administrative framework to curb loan defaults, emphasising the need for exhaustive support beyond financing alone.

The background exposure of resource-based communities across Africa shows considerable best practices and lessons for microfinance within the sector. Firstly, the integration of financial literacy training with credit provision services is detrimental. As seen in Sierra Leone, as it made attempts to embody financial education to achieve better results on loan utilization and repayment. Secondly, microfinance initiatives that enhance sustainable practices, such as those in Tanzania and Ghana highlights that integrating financial support with environmental administration can make long-lasting solutions for both communities and ecosystems.

Additionally, in resource-based communities targeting women can have metamorphic impacts. This has been exemplified in Tanzania whereby women miners who got microfinance aid contributed to the broader economic diverseness as well as improving their financial independence(Hinton et al:2003).Lastly the customization of loan products of earnings patterns of resource-based communities could aid mitigate the danger associated with unstable incomes. Therefore, it is important that such initiatives better serve flexible reimbursement schedules which suits better with the volatile incomes typical of ASM and other sectors.

Microfinance has shown the essential role it can play towards empowering resource-based communities across Africa by enhancing economic resilience, inclusion, and sustainable development. Whilst difficulties like low financial literacy, loan defaults, and income fluctuations persist, interventions by microfinance have shown positive effects on environmental stewardship, diversity in livelihoods and poverty alleviation. Therefore, as shown with case studies above it is key to note that a well-tailored microfinance that meets the distinct needs in resource- based communities can be socially and economic transformative in most marginalised regions in Africa.

2.5. Financial Challenges faced by Small Scale Miners in Mukaradzi

Small-scale miners in Mukaradzi, Mt Darwin, like any other Small to Medium Enterprises (SMMEs) face numerous financial challenges that hinder their operations and profitability.

2.5.1 High Cost of Equipment and Machinery

According to Chikono, & Chikozho, (2022), small-scale miners struggle to acquire necessary mining equipment due to high costs. This financial burden often forces them to operate with inadequate tools, leading to lower productivity and unsustainable operations. The prices of mining equipment and machinery are prohibitively high for small-scale miners, which limits their ability to operate efficiently and safely. This financial barrier often forces miners to rely on outdated or

less effective equipment. These high costs associated with acquiring modern machinery directly affect productivity levels. Many small-scale miners are unable to invest in the latest technology, which could enhance their operational efficiency and safety. Due to the financial constraints imposed by high equipment costs, miners may resort to using inadequate machinery, which increases the risk of accidents and operational failures. This not only jeopardizes the safety of the workers but also leads to potential financial losses. There is need for financial support mechanisms, such as loans or subsidies, to help small-scale miners acquire the necessary equipment. This support could significantly improve their operational capabilities and overall sustainability in the mining sector.

2.5.2 Limited Access to Credit Facilities

Many small-scale miners lack access to financial institutions that could provide loans or credit Mlambo, T. (2023). Traditional financial institutions are reluctant to provide credit facilities to these miners as they lack collateral there by posing great risk to banks. This limitation restricts their ability to invest in better equipment or expand their operations, which is crucial for growth

2.5.3 High Operational Costs

Since mining requires high working capital, it relates directly to their operational costs, to point out on electricity costs, the miners in Mukaradzi have no access to electricity as the area is remote, leading to reliance on expensive alternatives like generators significantly increase operational costs, Nyamadzawo (2023). This situation makes it difficult for miners to maintain their operations as they are financially incapacitated to do so.

2.5.4 Regulatory Fees, Licenses and Environmental compliance Costs.

The costs associated with obtaining and renewing mining licenses, as well as other regulatory fees, can be prohibitive for small-scale miners, Mutasa & Muroyi, (2022), Chikanda, (2023). The mining industry, as a special minerals industry is highly regulated, with various hefty fees such as annual licence fees, prospectors licence fees, environmental compliance fees amongst other things. These expenses can consume a large portion of their earnings, leaving little to nothing for reinvestment

2.5.5 Insecurity and Theft

Small-scale miners are often targeting for theft and violence, which can lead to financial losses, Ndlovu, S. (2022). They often cannot afford security costs, leading to operating without one and

posing a risk of losing their output to robbers. The costs associated with securing their operations or recovering from theft further strain their limited financial resources.

2.6 The Current Microfinance initiatives catering to Small Scale Miners in Mukaradzi

Currently there are not so many microfinance initiatives to support these small-scale miners leading to the current financial challenges they are facing. Nonetheless there are initiatives currently servicing small scale miners in Mukaradzi such as Microfinance Institutions (MFIs), Government initiatives and Peer-to-Peer Lending Platforms.

2.6. Microfinance Institutions (MFIs)

Local MFIs, which falls under ZAMFI (Zimbabwe Association of Microfinance Institutions), often support small-scale miners by offering tailored loan products with flexible repayment terms. These loans can help miners invest in equipment or expand their operations.

2.6.1 Government Initiatives

The Zimbabwean government has launched various initiatives aimed at supporting small-scale mining through microfinance schemes. Programs may include subsidized loans or grants specifically designed for miners. The Zimbabwe Women's Microfinance bank has been launched to assist women, who have been previously excluded in accessing microfinance initiatives, including those in mining.

2.6.2 Peer-to-Peer Lending

The small-scale miners have been largely benefitting from this initiative. Currently Gold buyers extend funding to small scale miners to boost their production and later recover their money when the miners sell their gold to them. This has helped small-scale mining ventures to buy equipment and machinery to boost production.

2.7 Theoretical Framework

The theoretical framework is a structure that summarizes concepts and theories, which a researcher develop from previously tested and published knowledge which the researcher synthesize to help have a theoretical background, or basis for data analysis and interpretation of the meaning contained in the research data. It comprises theories previously expressed by experts in the field into which the researcher plan to research. Swanson (2013, p. 122) explicitly asserts, "The theoretical framework is the structure that can hold or support a theory of a research study". Conclusively the framework consists of concepts, theories, and existing research that provide a

lens through which the research problem is analysed and understood. This framework helps to establish the relationships between all variables and informs the methodology of the study, ultimately bridging the gap between the research question and the analysis. The primary reason for developing a theoretical framework in research is to establish a scholarly foundation that facilitates the researcher's understanding of the data. Neuman (1997) emphasizes that a theoretical framework aids in making sense of the complexities in the data, allowing researchers to derive meaningful interpretations and insights based on established theories.

2.7.1 Guiding Research Design

The theoretical framework provides a structure for what to look for in the data and helps the researcher to discuss his findings more clearly, considering what existing theories say. This structure ensures that the research is coherent and methodologically sound, Creswell, J.W., & Poth, C.N. (2018).

2.7.2 Clarifying the Research Questions

The theoretical framework aids in formulating precise research questions, ensuring that the study remains focused and relevant. A well-defined framework allows the researcher to articulate what they aim to investigate clearly, Rocco, T.S., & Hatcher, T. (2011).

2.7.3 Informs Methodology

The framework influences the choice of research methods and data collection techniques, aligning them with the theoretical underpinnings of the study. This alignment enhances the validity of the research findings, Maxwell, J.A. (2020)

2.7.4 Enhances Understanding

It allows researchers to interpret their findings within the context of existing theories, thereby enhancing the understanding of the research problem. This contextualization is crucial for drawing meaningful conclusions, Johnson, R.B., & Onwuegbuzie, A.J. (2004)

2.7.5 Identifies Gaps in Literature

By reviewing existing theories, the researcher can identify gaps in the literature that his study may address, contributing to the field's body of knowledge. This identification is essential for justifying the relevance of the research, Booth et al (2008).

2.7.6 Facilitates Comparison

The Theoretical frameworks enable researchers to compare their findings with previous studies, helping to validate or challenge existing theories. This comparative analysis is vital for situating new research within the broader academic discourse, Yin, (2018)

2.7.7 Supports Argumentation

A well-defined theoretical framework strengthens the arguments made in the research, providing a solid foundation for the conclusions drawn. This support enhances the credibility of the research, Charmaz, (2014).

2.7.8 Encourages Interdisciplinary Approaches

It allows for the integration of theories from different disciplines, enriching the analysis and broadening the scope of the research. This interdisciplinary approach can lead to innovative insights, Klein, (2010).

2.7.9 Promotes Critical Thinking

Facione, P.A. (2015) emphasised that engaging with various theories encourages researchers to think critically about their assumptions and the implications of their findings. This critical engagement fosters a deeper understanding of the research topic.

2.7.10 Guides Future Research

According to Creswell, J.W. (2014), the insights gained from the theoretical framework can inform future research directions, suggesting new areas for exploration based on identified gaps or emerging questions. This guidance is crucial for advancing knowledge in the field.

2.8 The Sustainable Livelihoods Framework (SLF)

Sustainable Livelihoods Theory (SLT), initially proliferated by Chambers and Conway (1992), presents a framework for a perception on how people use resources and assets to withstand and recuperate their livelihoods over time. It highlights the lively interchange between different forms of assets which may be financial, natural, human, social and physical whereby people lure upon to establish a static and lasting livelihood. It is a widely used approach in development studies that seeks to understand the ways in which people make a living and how these livelihoods can be sustained over time. It considers the assets (human, social, financial, natural, and physical capital) that individuals and communities have at their disposal, the strategies they use to combine and

transform these assets, and the external factors like policies, institutions, and vulnerabilities that influence their livelihood outcomes.

In the milieu of small-scale mining, SLT aids to recognise the obstacles miners encounter in supporting their operations while tackling the broader repercussions for community welfare and environmental sustainability. Small-scale miners in Mukaradzi work in a difficult environment where entree to assets and resources is often limited. There the application of the SLT as a framework facilitates this study to recognize how miners use various forms of capital to surmount these restraints and intersect their livelihood needs. For example, miners are dependant of natural resources like mineral deposits whilst the unsustainable abstraction of these resources professes threats to both their welfare and the environment. In terms of financial capital, miners have minimal access registered financial institutions which then restrain their ability to obtain vital equipment, recuperate safety, and upsurge production. As such microfinance becomes pertinent here as a possible answer to improve miners' access to coffers. In relation to human and social capitals, miners tend to benefit from networks, skills and knowledge sharing within their communities. Therefore, associations and casual networks play a crucial role in curbing financial risks and partaking knowledge of cautious practices, which are crucial for sustainability.

SLT makes emphasis on how these several forms of capital relate within small-scale mining societies, accentuating the need for outside support schemes that encourage miners to use available resources sustainably. The liability context of SLT is also significant here, as small-scale miners encounter regulatory, economic, and environmental challenges that compromise the solidity of their livelihoods. By concentrating on these living capitals, this research can investigate how microfinance can strengthen miners' prevailing resources and assist them to foster more sustainable livelihoods. It underlines that sustainable development for small-scale miners cannot be attained merely via profits generation. As an alternative, it needs a universal approach that reflects the interrelation of livelihood capitals. Microfinance procedures designed to the needs of miners may possibly accelerate admission to financial capital, thus strengthening investments in cautious and more competent practices, tools improvements, and skills training. Such programs may also reinforce human and social capital by inspiring group-based loaning models or collaborative structures, which promote flexibility and mutual activity within the mining community. The SLF is directly relevant to this study as it provides a holistic understanding of the livelihoods of small-scale miners in Mukaradzi. By applying this framework, the study can assess how access to

microfinance (as a form of financial capital) can influence the other forms of capital for example improving physical capital through better equipment or enhancing social capital through community collaboration and ultimately lead to more sustainable livelihoods. The framework helps in understanding the broader socio-economic context in which small-scale miners operate and how microfinance can contribute to their economic resilience, environmental stewardship, and social well-being.

2.9 Financial Inclusion Theory

Financial theory suggests a foundation for interpretation the means and principles presiding the distribution, access, and consumption of financial resources. It incorporates several aspects, like investment analysis, risk management and capital structure (Brealey, Myers, & Allen, 2017). In the framework of small-scale mining, financial theory presents intuitions into how risk management, access to capital, and investment in prolific assets can induce the sustainability of mining activities. The financial inclusion theory emphasizes the importance of providing access to financial services for underserved and marginalized populations. It posits that access to financial services, such as credit, savings, insurance, and payment systems, is crucial for economic empowerment and poverty alleviation. The theory suggests that financial inclusion can lead to increased income, improved health and education outcomes, and greater economic stability. It underpins the core premise of this dissertation that providing small-scale miners with access to microfinance will lead to positive economic and social outcomes. The theory supports theargument that financial inclusion through microfinance can empower small-scale miners by providing them with the necessary capital to invest in their operations, improve productivity, andmitigate risks. This framework also helps to analyse the barriers to financial inclusion faced by small-scale miners and the role that microfinance institutions (MFIs) can play in overcoming thesebarriers. Key facets of financial theory utilized in this research are capital structure and access to finance. In the context of financial theory, it is important to have sufficient capital for business development and sustainability. Small-scale miners regularly brawl to access capital because of lack of surety and conventional credit histories, which makes customary banking inaccessible. Microfinance institutions (MFIs) present a complementary source of funding, allowing miners to access credits without traditional collateral and such capital can be used for operating costs, and environmental compliance measures, and technology upgrades. In relation to risk management, the financial theory underscores the risks concomitant with debt due financing and asset

investment. As for small-scale miners, taking on microloans can establish risks if there are variations in mineral prices, adverse regulatory changes, and equipment failure. Nevertheless, controlled microfinance products can include systems such as accommodating repayment terms, which alleviate these risks and guarantee that miners are not overstrained by debt.

Adding on, investment in productivity and efficiency as a capital, according to financial theory, access to resources can enhance output and operational competence by permitting investment in equipment, safety, and training. In small-scale mining, this implies that microfinance can help miners in transitioning from survival performances to an additional professionalized and sustainable business exhibit. Increased yield and efficacy can, in turn, increase miners' capability to pay back loans, strengthening a sustainable cycle of investment and expansion.

Another element of financial theory relevant to this research is financial literacy. For microfinance to be successful, miners need an elementary understanding of financial guidelines like interest rates, debt management and budgeting. Financial literacy courses offered alongside microfinance services can improve miners' competence to make advised financial resolutions, lowering the risk of over-indebtedness, and stimulating sensible investment in their mining activities. The theory is crucial to this study as it gives an outline for measuring how microfinance can function as a tool for capital purchase and risk relief for small-scale miners

Therefore, the integration of SLT and Financial Theory for an inclusive model is key to this study's and financial theory perfect each other in creating a universal framework for this study. SLT assists to classify the wider livelihood needs of miners, focusing on various systems of capital that influence sustainability. Financial theory, on the other hand, poses tools and theories to realistically influence financial capital and manage risks coupled with lending and investment. Together, these theories shepherd the expansion of a "working model" that powers microfinance to increase the sustainability of small-scale mining in Mukaradzi. By assimilating SLT with financial theory, this research deliberates both the socio-economic realisms of small-scale miners and the financial mechanisms required to support sustainable development. This attempt permits for a nuanced evaluation of how microfinance can enrich miners' capability to manage risks, enhance resources, and accomplish long-term sustainability.

In conclusion this preliminary literature review has highlighted the importance of microfinance in enhancing the sustainability of small-scale mining. It has established the theoretical frameworks that will guide the research and identified critical gaps that this study will address. By synthesizing

existing knowledge and focusing on the specific context of Mukaradzi, this research aims to contribute valuable insights into the role of microfinance in promoting sustainable development in the mining sector.

2.10 Conceptual Framework for the study

The conceptual framework for this study is intended to investigate how microfinance can sustain the sustainability of small-scale miners in Mukaradzi, Mt. Darwin, Zimbabwe. The conceptual framework spots key variable like financial literacy, availability of collateral, environmental practice compliance, availability of accounts, formalization, and explains the pathways through which microfinance can enhance sustainability in small-scale mining communities.

2.10.1 Microfinance Access (Independent Variable)

Access to microfinance is crucial for small-scale miners as it provides the necessary capital to invest in mining operations, improve equipment, and adopt sustainable practices. Without access to finance, miners may resort to inadequate methods that jeopardize their economic viability and environmental sustainability. In Mukaradzi, where many miners operate informally, increasing access to microfinance can empower them to transition towards more sustainable and formalized practices, enhancing their overall productivity and community impact.

2.10.2 Sustainability of Small-Scale Mining (Dependent Variable)

Sustainable mining practices are essential for minimizing negative environmental impacts, improving community welfare, and ensuring long-term profitability. Sustainability is a multifaceted concept that incorporates economic, social, and environmental dimensions. In Mukaradzi, promoting sustainability through microfinance can lead to better resource management, reduced environmental degradation, and enhanced livelihoods for miners and their communities. This outcome is critical for achieving broader developmental goals in the region.

2.10.3 Mediating and Moderating Variables

These variables explain how microfinance access influences sustainability outcomes. They include the availability of collateral, financial literacy, availability of bank accounts formalization, and environmental compliance.

For small-scale miners, the ability to provide collateral can be a significant determinant in securing financing. Those without valuable assets may face challenges in obtaining loans, limiting their ability to invest in sustainable mining practices, on the other hand miners who possess collateral, can access larger loans or better terms, allowing for significant investments in technology and practices that enhance sustainability. Furthermore, high levels of financial literacy enable small scale miners to understand and effectively manage their loans, leading to better financial planning and investment in sustainable practices. Conversely, those with low literacy can result in poor financial management and missed opportunities. The educated miners are more likely to take advantage of microfinance, utilizing funds effectively to improve their operations and meet sustainability goals, such as minimizing environmental impact and maximizing economic returns. On the other hand, access to a bank account is essential for managing financial transactions and receiving funds from microfinance institutions. Availability of bank accounts facilitates smoother transactions, record-keeping, and financial planning, making it easier for miners to access and utilize microfinance for sustainable practices.

The moderating variables such as formalization and environmental compliance influence the strength or direction of the relationship between microfinance access and sustainability outcomes. In Mukaradzi, some of these small-scale miners operate informally facing barriers in accessing microfinance due to perceived risks by lenders. Formalized operations are generally seen as more stable and trustworthy, leading to greater access to financial services. When miners formalize their operations, they not only enhance their credibility with these financial institutions but also increase their chances of receiving support that can lead to sustainable practices, such as adherence to regulations and improved operational standards. Furthermore, lenders may be more inclined to provide financing to miners who demonstrate commitment to environmental compliance, viewing them as lower-risk investments. If these small-scale miners comply with environmental standards, it enhances the reputation and sustainability of mining operations, making them more attractive to microfinance institutions. This can lead to better access to funds, which in turn supports further sustainable practices.

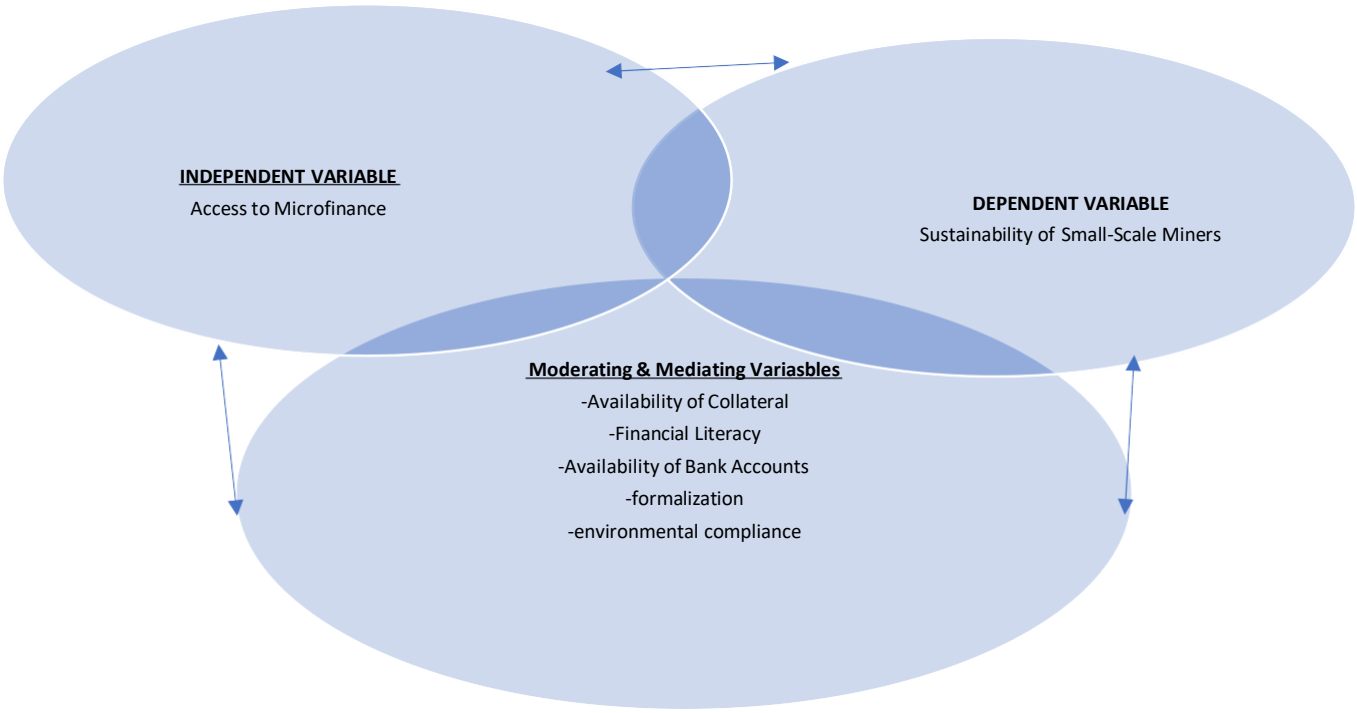


Figure1:Conceptual framework diagram showing the relationship between the independent, dependent, and moderating and mediating variables: source Author

Therefore, this conceptual framework is cardinal in achieving the research objectives of knowing the hypothetical of microfinance in advocating the sustainability of small-scale miners. It recognizes the detailed conduits through which microfinance can change miners' businesses and advance their flexibility to economic and environmental demands.

2.11 Empirical literature review

Microfinance has proven to be a vital mechanism for economic development in marginalized communities, particularly in the context of small-scale mining. This literature review expands on previous findings by other researchers providing a comprehensive examination of empirical studies that link microfinance, sustainability, and small-scale mining, particularly in the Mukaradzi region of Mt Darwin, Zimbabwe. This review is organized into three sections, that is,

microfinance, sustainability, and small-scale mining, each highlighting key findings from relevant research.

2.11.1 Microfinance

2.11.1.1 Access to Credit and Business Expansion

Zhou (2017), investigated the effects of microfinance access on small-scale miners, focusing particularly on how financial support influences operational capacity and economic outcomes. Zhou's study primarily focused on access to microfinance as the independent variable, while the dependent variables included operational capacity, productivity levels, and revenue generation. The study highlighted how access to credit can lead to significant improvements in these areas, while also identifying challenges that could affect the overall impact of microfinance on small-scale mining operations. The primary objective of Zhou's study was to analyse the impact of microfinance on the operational efficiency and productivity of small-scale mining enterprises. Zhou aimed to determine whether access to credit could facilitate business expansion and improve revenue generation in this industry sector. His study utilized a mixed-methods approach for the study, combining quantitative data analysis with qualitative interviews which involved a survey of small-scale miners who had accessed microfinance services, assessing changes in operational capacity and productivity before and after receiving funding, and conducting interviews with a subset of these miners to gain deeper insights into their experiences and the challenges they faced in accessing credit. The study *found* that small-scale miners who accessed microfinance experienced, on average, a 40% increase in their operational capacity which was largely attributed to the ability to purchase essential equipment and materials needed for mining activities. The study also found that access to microfinance led to increased productivity levels due to access to better equipment. The increase in operational capacity and productivity directly correlated with higher revenue streams with many miners reporting significant improvements in their income, enabling them to reinvest in their businesses and support their families. Despite the positive outcomes, Zhou's study identified several challenges in accessing microfinance, including high-interest rates, lack of financial literacy, and bureaucratic hurdles in the loan application process. The study recommended that microfinance institutions should develop tailored financial products specifically designed for small-scale miners which consider the unique cash flow cycles and operational needs of the sector. To enhance the effectiveness of microfinance, the study

recommended implementing financial literacy programs to educate miners about managing loans, budgeting, and financial planning.

2.11.1.2 Diverse Financial Products

According to Chiroro & Chikozho (2020), when they explored the significance of diverse microfinance products specifically designed for the mining sector, focusing on how tailored financial solutions can meet the unique needs of miners emphasized the importance of diversified microfinance products tailored for the mining sector, their study revealed that customized loans for purchasing specific mining equipment led to a 30% improvement in efficiency among borrowers, underscoring the need for tailored financial solutions. Chiroro & Chikozho's study focused on customized microfinance products as the independent variable, while the dependent variables included operational efficiency, productivity, and financial outcomes. Their study's objective was to assess the impact of customized microfinance products on the operational efficiency and financial outcomes of mining enterprises. The researchers sought to determine whether tailored loans for specific equipment purchases could enhance productivity and profitability in the sector. Using a quantitative research design methodology, utilizing surveys and financial data analysis their study revealed that miners who utilized customized loans for purchasing specific mining equipment experienced, on average, a 30% increase in productivity. This enhancement was attributed to the improved technology and efficiency of the new equipment. Chiroro and Chikozho emphasized that diversified microfinance products, tailored to the operational needs of the mining sector, were more effective than generic loans. Customized loans allowed miners to acquire equipment that directly addressed their operational challenges, and led to revenue growth improvement, allowing for reinvestment and business expansion. Their study recommended that microfinance institutions should develop a wider range of specialized financial products aimed at addressing the specific needs of small-scale miners, including loans for equipment, operational expenses, and working capital. It also encouraged partnerships between microfinance institutions and equipment suppliers to facilitate easier access to financing for necessary mining equipment, potentially reducing costs for miners. Notably, the researchers advocated for more flexible lending criteria that consider the unique revenue cycles and risks associated with small-scale mining, thereby enabling more miners to qualify for loans.

2.11.1.3 Challenges in Repayment

A study by Ndlovu (2022) highlighted that while access to microfinance is beneficial, high-interest rates and rigid repayment schedules often lead to financial stress with up to 60% of small-scale miners struggling to meet repayment obligations. Ndlovu's study focused on access to microfinance as the independent variable, while the dependent variables included financial stability and operational performance. Ndlovu (2022) examined the challenges faced by small-scale miners in repaying microfinance loans, focusing on how high-interest rates and inflexible repayment schedules contribute to financial stress and operational difficulties. The study aimed to analyse the impact of loan repayment challenges on the financial stability and operational performance of small-scale mining enterprises. Ndlovu sought to identify the key factors contributing to repayment difficulties and their consequences for miners. The researcher used quantitative research approach, and found that high-interest rates were a significant barrier to effective loan repayment, with many miners reporting that the cost of borrowing consumed a substantial portion of their revenues, limiting their ability to reinvest in their businesses. Ndlovu further highlighted that inflexible repayment schedules did not align with the irregular income streams typical in the mining sector. This mismatch led to increased financial stress, as miners struggled to meet payment deadlines during lean periods. The inability to repay loans adversely affected miners' operations, leading to reduced investment in equipment and maintenance, which further diminished productivity and their revenue. Ndlovu recommended that microfinance institutions reconsider their interest rate structures to make borrowing more affordable for small-scale miners, which including lowering interest rates to enabling small scale miners to repay, implementing flexible repayment schedules that align with the income patterns of miners to alleviate financial pressure during low-income periods. The study also called for policy interventions to protect small-scale miners from predatory lending practices, ensuring that microfinance products are designed to support rather than hinder their financial stability.

2.11.2 Sustainability

2.11.2.1 Environmental Management Practices

Mhlanga (2020) found a direct link between microfinance access and the adoption of sustainable mining practices. The study investigated the relationship between access to microfinance and the adoption of sustainable environmental management practices in the mining sector, focusing on how financial support can influence miners' investment in environmentally friendly technologies.

Mhlanga's study focused on access to microfinance as the independent variable and the adoption of sustainable environmental management practices as the dependent variable. The primary objective of Mhlanga's study was to assess the extent to which access to microfinance enables small-scale miners to implement sustainable practices that mitigate environmental degradation, particularly soil and water contamination, using a mixed-methods approach, combining quantitative surveys with qualitative interviews. The study found that those who received funding were more inclined to upgrade their equipment and adopt practices that reduced their environmental impact. The miners who implemented these sustainable practices reported significant reductions in soil and water contamination. The adoption of cleaner technologies not only benefited the environment but also improved the overall health and safety of mining communities. Mhlanga also noted that access to microfinance often came with educational components that raised awareness about environmental issues which motivated miners to prioritize sustainability in their operations. Despite the positive outcomes associated with microfinance, the study also identified challenges such as limited access to advanced technologies and a lack of training in sustainable practices, which hindered broader implementation. Mhlanga then recommended that microfinance institutions develop specific financial products aimed at supporting sustainable mining practices which include lower-interest loans for purchasing eco-friendly technologies. The study also suggested implementing training programs to educate miners about sustainable practices and how to effectively utilize new technologies thereby enhancing the impact of financial support on environmental management. Mhlanga advocated for partnerships between microfinance institutions, technology providers, and government agencies to facilitate access to sustainable technologies for small-scale miners which will improve their sustainability as well as the communities surrounding them. Lastly, the research called for policy incentives that encourage miners to adopt environmentally friendly practices, such as tax breaks or grants for investments in sustainability.

Mhlanga's research highlights the critical role of microfinance in promoting environmental management practices within the mining sector. By enabling small-scale miners to invest in sustainable technologies, access to credit can lead to significant reductions in environmental degradation, benefiting both the miners and their communities.

2.11.2.3 Long-Term Economic Viability

The research by Makoni (2021), argued that sustainable mining practices supported by microfinance lead to long-term economic viability, with miners who adopted sustainability measures reporting a 15% increase in profits over five years due to enhanced marketability of their products. Makoni (2021) examined the relationship between sustainable mining practices supported by microfinance and the long-term economic viability of small-scale mining operations. Makoni's study focused on sustainable mining practices supported by microfinance as the independent variable and long-term economic viability as the dependent variable. The main objective of Makoni's research was to assess the impact of sustainable practices on the economic performance of small-scale miners over time. The study aimed to demonstrate that financial support for sustainability leads to improved profitability and market competitiveness. Makoni utilized a longitudinal study design, collecting data over five years from a sample of small-scale miners who accessed microfinance to implement sustainable practices, including quantitative measures of profitability and marketability, as well as qualitative interviews to explore miners' experiences with sustainability. The study found that miners who adopted sustainable practices reported an average increase of 15% in profits over five years. This increase was attributed to enhanced efficiency and reduced operational costs associated with sustainable technologies. Makoni also noted that sustainable practices enhanced the marketability of miners' products. On the downside, the study identified challenges in adopting sustainable practices, including upfront costs and a lack of technical expertise, which could hinder some miners from fully realizing the benefits. Makoni recommended that microfinance institutions develop financial products specifically designed to support sustainable investments, including lower-interest loans for purchasing sustainable technologies. The research called for continued investment in research and development to innovate sustainable mining practices and technologies that can further enhance economic viability.

2.11.3 Small-Scale Mining

2.11.3.1 Economic Contributions to Local Communities

A study by Moyo (2018) reported that small-scale mining significantly contributes to local economies in Zimbabwe by creating jobs, stimulating local businesses, with a multiplier effect on the local economy. Moyo's study focused on small-scale mining activities as the independent variable and economic contributions to local communities as the dependent variable. Moyo

examined the economic contributions of small-scale mining to local communities in Zimbabwe, focusing on how these activities enhance local economies through job creation and business stimulation. Moyo's study research objective was to assess the economic impact of small-scale mining on local communities, quantifying the contributions of the sector to employment and local business development, highlighting the broader economic effects. The research used mixed-methods methodology approach, involving collecting economic data from small-scale mining operations, analysing employment figures and financial flows to local businesses. The study found that small-scale mining significantly contributes to job creation within local communities. Many miners employ additional workers, leading to increased employment opportunities for residents. Moyo highlighted that mining activities stimulate local businesses, including suppliers, service providers, and vendors. The influx of money from mining operations supports a variety of local enterprises, creating a multiplier effect that enhances overall economic activity. The research indicated a clear multiplier effect, where the economic benefits of mining extend beyond the sector itself, positively impacting related industries and services. This interconnectedness strengthens the local economy. Despite these positive impacts, Moyo identified challenges such as regulatory hurdles and limited access to markets that can hinder the potential economic contributions of small-scale mining. Moyo recommended the establishment of a supportive policy framework thatenables small-scale miners to operate effectively and access markets, thereby maximizing their economic contributions to local communities. The study further suggested implementing capacity-building programs to enhance the skills and knowledge of small-scale miners, improves their operational efficiency and economic impact. The research called for ongoing monitoring and evaluation of the economic contributions of small-scale mining to ensure that the benefits are maximized and to inform future policy decisions.

2.11.3.2 Technological Adoption and Efficiency

According to Chiroro & Chikozho (2020), small-scale miners who received microfinance were more likely to adopt new technologies, resulting in a 35% increase in operational efficiency. Chiroro and Chikozho (2020) investigated the relationship between access to microfinance and the adoption of new technologies among small-scale miners, focusing on how this technological advancement enhances operational efficiency. The primary objective of their study was to assess the impact of microfinance on the willingness and ability of small-scale miners to adopt innovative technologies. The researchers aimed to quantify the improvements in operational efficiency

resulting from these technological advancements. The research utilized a quantitative research design, conducting surveys among small-scale miners who accessed microfinance. They analyzed data on technology adoption rates and measured operational efficiency before and after receiving financial support. The study found that small-scale miners who received microfinance were significantly more likely to adopt new technologies since access to funding enabled miners to invest in modern equipment and tools essential for improving mining processes. Furthermore, the research reported an average increase of 35% in operational efficiency among miners who adopted new technologies. This improvement was attributed to enhanced productivity, reduced operational costs, and lower downtime. Even though technology adoption has benefits, the study identified barriers to technology adoption, including high initial costs, limited access to training on new technologies, and a lack of awareness about available innovations. The researchers recommended that microfinance institutions develop financial products specifically aimed at supporting technology adoption, including lower-interest loans for purchasing equipment. Furthermore, Chiroro and Chikozho suggested implementing training programs to educate miners on the use and maintenance of new technologies, ensuring they can maximize their investment and operational efficiency. The researchers also called for awareness campaigns to inform miners about the latest technologies and their potential benefits, encouraging more widespread adoption.

2.11.3.3 Health and Safety Improvements

A study by Mavhunga (2019) highlighted that access to microfinance allowed small-scale miners to invest in health and safety measures with a reported reduction in workplace accidents by 40% among miners who implemented safety protocols funded by microloans.

2.12 Research Gap

The existing literature on microfinance and its role in supporting small-scale miners provides valuable insights, but significant gaps remain, particularly concerning the specific context of Mukaradzi, Mt Darwin, Zimbabwe. According to the best of my knowledge, one notable gap is the lack of targeted microfinance programs designed explicitly for small-scale miners in this area. This lack of targeted support can lead to ineffective use of financial resources and missed opportunities for enhancing sustainability in mining practices. Research is needed to evaluate the

specific needs of small-scale miners in Mukaradzi and to develop microfinance models that effectively address these needs.

Chapter 2 Summary

This chapter looked at literature review, understanding what it is, and its importance to research, then looked at the background literature of the research area, the theoretical literature, conceptual framework, empirical literature review and finally the research gap. The next chapter will look at the research methodology, understanding what it is, exploring its components including research philosophy, research design, and the research strategy.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

Having explored the foundational and the structure of the study as well as setting reader's expectation through aims, objectives, and significance of this study, we now explore the methodology. The methodology in any study is very crucial as it outlines the systematic approach and procedures that the researcher uses to collect and analyse data. This chapter aims at elaborating the methods that were used in acquiring a valid explanation to the research problem. It is divided into several sections. In the first section, the study sheds light on the study site and the second section discusses the research design adopted. Section three elaborates on the study population followed by the unit of analysis and the sampling procedure used while forth section discusses the data collection methods. Fifth section elaborates on how the collected data was analysed and

interpreted to provide meaning to the researcher and the last sections provides conclusion of this chapter.

3.1 Research Philosophy

Research philosophy refers to the underlying beliefs and assumptions that guide researchers in their approach to inquiry which shapes how researchers perceive reality, understand knowledge, and design their studies. According to O'Gorman & MacIntosh (2014), research philosophy encompasses the fundamental assumptions about the nature of knowledge and reality that inform the research process. It influences the choice of research methods and the interpretation of findings, making it essential for researchers to clearly articulate their philosophical stance to ensure coherence in their research design and methodology. Sharma (2024) explains that research philosophy serves as the lens through which researchers interpret reality and generate knowledge. It influences the choice of research design and methods, ultimately affecting how results are analysed and understood.

The Research philosophy provides the foundational beliefs that inform the research design. It helps researchers determine the most appropriate methodologies and methods for collecting and analysing data. According to Saunders et al. (2016), a clear understanding of research philosophy is crucial for developing a coherent research design. Furthermore, a clearly defined research philosophy articulates the underlying assumptions about the nature of knowledge (epistemology) and reality (ontology). This clarity helps researchers understand how their beliefs influence their approach to inquiry. Guba and Lincoln (2005) emphasize that recognizing these assumptions is essential for any research endeavour. Research philosophy also serves as a framework for interpreting results. Mhlanga (2020) explains that a philosophical stance helps researchers contextualize their findings within broader theoretical and practical implications, guiding the discussion of results. There are four major types of research philosophies which are realism, constructivism, positivism, and pragmatism. In this research, the constructivist paradigm is used.

3.1.1 Constructivist Research Philosophy

This study adopted a constructivist paradigm, which posits that knowledge is constructed through social interactions and experiences. This approach was suitable for exploring the lived experiences of small-scale miners regarding their access to microfinance and its impact on their sustainable

practices. By focusing on qualitative data, the research seeks to understand the subjective perspectives of participants, providing rich insights into their challenges and opportunities. The constructivist approach is deep-rooted in the conception that realism is subjective, co-constructed by participants, and modelled by social and cultural settings (Guba & Lincoln,2019). It aligns with the objective of developing a nuanced model for leveraging microfinance to reinforce sustainability among small-scale miners. From a constructivist standpoint, the study acknowledges that microfinance cannot be understood chastely as a financial mechanism; as an alternative, it must be observed in light of the beliefs ,social interactions, and personal accounts that shape miners' relationships with financial institutions. Constructivism implies that the value and effect of microfinance are not innately fixed but are observed inversely by each miner based on their unique economic, social, and personal circumstances.

In Mukaradzi, miners are likely to explain and use microfinance grounded on past experiences with informal finance, community support structures, and cultural practices around funds and investment. Constructivist philosophy confirms the idea that these explanations are cardinal to understanding how microfinance can or cannot contribute to sustainable livelihoods in this specific context. For instance, miners who have formerly experienced challenges with informal borrowing might feel microfinance as a risky attempt while others may view it as a prospect for economic autonomy. By embracing a constructivist lens, the study highlights the significance of miners' subjective realism, pursuing to uncover how these explanations influence their commitment with microfinance. In this study, interviews with miners gives perceptions into how they read the risks and benefits of microfinance, while focus groups uncover community-level underlying forces and shared acuities. Constructivist methodology also highlights the significance of reflexiveness, realizing that the researcher’s explanations are part of the learning construction process. Thus, this study engaged in constant echo to warrant that outcomes precisely show miners' views and are not exclusively influenced by external beliefs. The following sections outline the research design, study population, sampling strategies, data collection and analysis methods, and ethical considerations.

3.2 Research Design

A research design is a structured plan that outlines how a research study will be conducted serving as a blueprint for collecting, measuring, and analysing data to answer specific research questions

or test hypotheses.Creswell & Poth (2019), defined research design as "the plan or proposal to conduct research, which includes the methods for collecting data, the sampling procedures, and the data analysis strategies." According to Flick (2020), research design is "the structure of a study that ensures the research questions are answered in a reliable and valid way," noting that a good research design helps to determine how data will be collected and analyzed, ensuring that the findings can be trusted.

According to Saunders et al. (2020), research design serves an exploratory purpose by helping researchers investigate new areas where limited information is available, a phase which is crucial for gaining initial insights and formulating hypotheses. Flick (2020), highlights the descriptive purpose of research design, emphasizing that it focuses on providing a detailed account of phenomena. This type of research aims to systematically describe characteristics and behaviors within a specific context. Another research by Creswell & Poth (2021) discussed the explanatory purpose of research design, which involved explaining relationships between variables and identifying causal links. This purpose is essential for testing hypotheses and understanding underlying mechanisms. There are several types of research design including causal, descriptive, mixed approach, and interpretive research design. In this research study, an interpretive research design is used.

3.2.1 Interpretive research design

According to Schwandt, T. A. (2020), and, Yalow, D., & Schwartz-Shea, P. (2021), Interpretive research design is a qualitative research approach that seeks to understand the meanings and experiences of individuals within their social contexts. It emphasizes the subjective interpretations of participants and the importance of context in shaping those interpretations. This design is grounded in the belief that social reality is constructed through human interactions and experiences, making it essential to explore the perspectives of individuals to gain a deeper understanding of the phenomena being studied. This design is particularly suitable for studying complex social phenomena where understanding the context and subjective experiences of individuals is crucial. Furthermore, Interpretive research is ideal when there is limited existing knowledge about a topic, allowing researchers to explore new areas and generate insights. This is often the case in emerging fields or under-researched populations. The mining practices in Mukaradzi are influenced by various social, economic, and cultural factors. An interpretive approach allows for a nuanced understanding of how these factors shape the experiences and

practices of small-scale miners, providing insights that quantitative methods may overlook. Small-scale miners also often face unique challenges and opportunities that are best understood through their personal narratives. By employing interpretive research, the study can capture the meanings that miners attach to their work, their motivations, and the impact of mining on their lives and communities. This research study includes exploring the financial dynamics, challenges, and opportunities faced by small-scale miners and interpretive research design aligns well with these goals. It enables the researcher to delve into the subjective experiences of miners, thereby fulfilling the objectives of understanding their realities and informing potential interventions or support mechanisms. The researcher lived with small scale miners observing their daily lives, activities, operations, and collected a detailed experience to understand the challenges and opportunities of leveraging mining that sustains livelihoods in Mukaradzi. This prompted a direct interaction between the researcher and small-scale miners to collect first-hand information. This was achieved through data collection techniques such as participant-observation, the in-depth interviews (IDIs) and focused group discussions (FGDs). To get to participants snowball and purposive sampling techniques were used to obtain the key informants and manage time in the field. The research was based on community and small-scale miners in Mukaradzi to understand their experiences, social realities, perceptions, challenges, and opportunities in mining operations overtime and how it has impacted their livelihoods in pursuit on establishing sustainable methods of operation. Complementing the ethnographic approach, an interpretive research design was chosen for its exploratory nature. The complex and multifaceted nature of small-scale mining operations required a flexible methodology that could adapt to the unique nuances of the Mukaradzi small scale miners and the community at large. Qualitative research, through methods such as focus group discussions, participant observation and in-depth interviews, allowed for a holistic perspective by capturing the diverse voices and experiences of small-scale miners, community members and other stakeholders directly involved in mining operations.

3.3 Research Approach

A research approach refers to the overall strategy or plan that guides the researcher in the process of conducting a study. It encompasses the methods and techniques used for data collection, analysis, and interpretation, aligning with the research objectives and questions. Creswell (2021) defines a research approach as "the general orientation that guides the researcher in the process of collecting and analysing data." Mason (2018) describes a research approach as "the framework

that shapes the research process, including the choice of methods and the overall design of the study."

3.3.1 Qualitative Method

The research used a qualitative research design, this design allows for an in-depth exploration of the specific context of Mukaradzi, enabling the researcher to collect detailed information about the experiences of small-scale miners. According to Yin (2020), the choice of a research design is determined by the nature of the research questions that the study intends to answer. To address the intended research aim and objectives and provide answers to the researcher's questions, an ethnographic study was employed within the framework of a qualitative research method. The ethnographic study and qualitative research method framework were deemed particularly appropriate for gaining a comprehensive understanding economic, environmental, and social realities of small-scale miners in Mukaradzi. The qualitative method emphasizes the in-depth understanding, and thus it was essential in capturing the depth and comprehensive experiences of small-scale mining operations which are key in leveraging work models that sustains their livelihoods.

3.4 Data sources and collection methods

Data sources refer to the origins of information used for conducting research (Babbie, 2013). The study used both written and unwritten data sources to meet its aim and objectives. Unwritten sources included first-hand information collected from small scale miners using ethnographic qualitative data collection methods (Primary data). The direct conduct between the researcher and the locals created a positive rapport between them making the community to act in their natural behaviour. This enabled the researcher to use participant observation method to study the miner's experiences and behaviour and how they interacted with the area in their daily lives. This study involved both individuals and groups and it was culturally and ethnically inclusive meaning that all groups and all strata of the society, ordinary people and state officials working in the mining sector were included. However, the study did not recruit minors who were below 18 years of age.

3.4.1 Focus Group discussions (FGDs)

According to Van Eeuwijk, & Angehrn (2017), Focus Group Discussion (FGD) is a qualitative research method that involves a group of participants discussing a particular topic or issue. In this

study, FGDs were used to gather primary data on mining cooperatives and associations activities in Mukaradzi, and how their experiences impact sustainable operations and livelihoods. The FGDs helped the researcher to gather first-hand data on different perception about the small-scale mining practices across the community. The participant's enrolment was based on their knowledge about the subject under discussion and it was this achieved through purposive sampling technique. The participants included members who were aged eighteen years and above and motes of the discussion were obtained with the permission of the participants.

3.4.2 In-Depth Interviews (IDIs).

IDIs are qualitative research method that aims to collect detailed and personal information from individual participants. In this study, IDIs was used to gather data on the economic, social, and environmental experiences and realities of small-scale miners in Mukaradzi. Semi-structured in-depth interviews were conducted among the people actively involved in small scall mining either formally or informally and key stakeholders who are custodians of mining operations such as, microfinance representatives, government officials, community leaders and community-based organisations within Mukaradzi. The semi-structured interviews created an environment for the researcher to explore the experiences and impacts of the respondents with regards to issues surrounding small scale mining activities. The recruitment was done using both snowball and purposive techniques.

3.4.3 Secondary sources

Relevant secondary sources of data were not only used to form this thesis, but they were used to enrich research outcome to gain a better comprehension of the problem under study. Scholarly reviewed articles, journals, books, and unpublished work were used to provide background literature about the Mukaradz*i community* and small-scale mining practices.

3.5 Population and Research Area

Mukaradzi is a rural area located in Mt. Darwin District in Mashonaland Central Province in northern Zimbabwe. Famous for its rich mineral sediments, Mukaradzi has become a notable centre for small-scale and artisanal mining, chiefly in gold extraction. The region is categorized by its semi-arid climate, hilly terrain, and socio-economically relegated communities that rely heavily on mining for livelihoods. The focus on Mukaradzi as the research area is substantial due

to its economic reliance on small-scale mining, which portrays distinct challenges and opportunities for local communities.

Geographically, Mukaradzi is situated in the Mt. Darwin District, which is 150 kilometres north of Harare, Zimbabwe. The region is mostly rural, with constrained infrastructure and access to necessary services. Mukaradzi itself is located along the Mukaradzi River, a characteristic that has historically induced settlement configurations and mining activities in the area. Given its distance from urban centres and industrialized zones, Mukaradzi has persisted underdeveloped, with local communities depending largely on informal mining activities and subsistence agriculture to meet their economic needs (Mawowa, 2013).

Demographically, the population of Mukaradzi is comprises mostly of informal miners, smallholder farmers, and migrant laborers who have relocated into the area due to the accessibility of gold deposits. A sizable portion of the population comprises of young men and women engaged in mining activities, as formal employment opportunities are scarce (Kamete, 2008). The population is also quite momentary, as people from various parts of Zimbabwe relocate into and out of Mukaradzi in pursuit of economic opportunities allied with the gold mines. This has led to a distinct community, though one often deficient of solid social infrastructure and sufficient access to education, health, and financial services (Mupfurutsa & Nyandoro, 2012).

Small-scale mining is the keystone of Mukaradzi's economy. Most mining activities in Mukaradzi are unauthorized and small-scale, meaning that they are habitually unregistered and trade outside the horizon of governmental laws. The Zimbabwean government has recognised the economic significance of small-scale mining, approximating that it credits for a considerable fragment of the country's gold production and foreign currency earnings (Mabhena, 2012). However, this sector stays dogged by difficulties, including lack of finance, incapable equipment, and environmental dreadful conditions. While it provides jobs and income for individuals otherwise have few options, the deficiency of regulatory negligence means that many miners operate in treacherous and contaminated conditions. Moreover, their lack of access to formal financial services, they thrash to acquire capital for equipment and operational improvements (Chimonyo et al., 2019). This dependence on informal mining practices has led to ineffective gold extraction performs and environmental issues, like land degradation and water pollution along the Mukaradzi River.

As alluded in previous chapters, the fast invasion of small-scale miners into Mukaradzi has carried with it a host of social and environmental constraints. Socially, the area has experienced growth

in disputes among miners, competing for mining sites, and occasional disagreements between miners and local communities over resource management The temporary nature of the mining population has also subsidised to social uncertainty, with inadequate investment in lasting community infrastructure, like schools and healthcare facilities (Maponga & Ngorima, 2003). Furthermore, the informal characteristics of most mining activities has ensued in a lack of legal safeties for miners, who often face manipulation and dangerous working conditions (Spiegel, 2015).

Environmentally, small-scale mining in Mukaradzi has led to substantial land degradation and water pollution. Mining operations regularly engage the use of mercury and other harmful materials to process gold, leading to contamination of the Mukaradzi River and surrounding areas. This sets a severe health threat to both miners and local communities who rely on the river for water. Additionally, the desertification caused by mining activities has added to soil erosion, lowering agricultural productivity in the area (Dreschler, 2017). These environmental issues highlight the need for more sustainable mining systems and mediations, like microfinance programs that might allow miners to implement cleaner, more competent technologies.

Mukaradzi exhibits a distinctive case for investigating the effect of microfinance on small-scale mining sustainability due to its heavy dependency on informal mining, socio-economic challenges, and environmental degradation. Its demographics, combined with its economic reliance on mining, accentuate the need for sustainable financial intrusions that can reinforce miners' livelihoods and moderate negative environmental effects. The perceptions gained from Mukaradzi may possibly have wider consequences for other small-scale mining communities in Zimbabwe and across Africa, where similar socio-economic and environmental challenges persevere.

3.6 Unit of analysis, Sample size and Sampling procedures

In research, a sample is defined as a subset of the population selected for participation in a study. The process of selecting an appropriate sample is crucial, as it influences the validity and reliability of the findings (Creswell & Poth, 2018). The unit analysis of the study includes 20 small-scale mining claims in Mukaradzi, Mt. Darwin, Zimbabwe. The research also comprises a range of participants, cooperative leaders, microfinance institutions, youth mining and members of women groups and government officials in the mining sector, to provide a universal view of the microfinance panorama. Focusing on miners permits the study to explore specific experiences, financial practices, and sustainability findings within the community. Individual and group-level

focus aids reconnoitre how microfinance stimulates miners' pliability, income solidity, and socio-economic conditions in Mukaradzi, offering an inclusive understanding of the crescendos at play within this resource-based community.

Given the constructivist paradigm, a purposive sampling method were used to pick participants who can provide rich intuitions into the microfinance subtleties and sustainability issues in Mukaradzi. Purposive sampling enabled the researcher to intentionally choose individuals and groups most appropriate to the study objectives. Additionally, snowball sampling was used to detect miners and stakeholders who may not be primarily accessible or noticeable but are vital to understanding the local microfinance environment. More so, the selected informants had to be small scale miners or community member who were actively involved in mining either formally or informally. Given the in-depth, qualitative nature of the study, the sample size remained variable, targeting for data inundation which is the point whereby no new insights are appearing (Guest, Bunce, & Johnson, 2020). This was typically accomplished with at least 20 participants to get adequate information which meets the goals of this research. During the entire period spent in Mukaradzi, the researcher collected data through both interviews, direct and indirect observations. The number of participants involved in this research was determined based on the nature of the study, data collection duration, the research questions, and the data collection methods used. The sample size for each data collection method was determined based on the principle of data saturation, which means that data collection is continued until no new information is being gathered (Hennink & Kaiser, 2022).

3.7 Research Instruments

Research instruments are crucial for facilitating the systematic collection of data, enabling researchers to derive meaningful insights from studies, Creswell & Poth, (2018). In this research, which aims to develop a working model of leveraging microfinance for the sustainability of small-scale miners in Mukaradzi, Mt Darwin, one primary instrument would be employed: a semi-structured interview guide. The instrument has been meticulously crafted to capture various dimensions of the research objectives, ensuring an in-depth understanding of participants' experiences and needs. The semi-structured interview guide would serve as a key tool for conducting qualitative interviews with Small scale miners. This instrument will feature a range of open-ended questions that invite participants to share their personal experiences, challenges, and perspectives in their mining journeys. The semi-structured format is particularly beneficial as it

allows for flexibility in exploring participants' responses while maintaining a focus on central research themes, Kallio et al., (2016).

3.8 Data processing and analysis

Data collected from the field was first transcribed into written documents. Data was then analysed using narrative and thematic analysis techniques using NVIVO software. According to Moser & Korstjens, (2018), narrative analysis and thematic analysis are two techniques that are commonly used in qualitative research to analyse data collected from participant-observation, key informant interviews, in-depth interviews, and focus group discussions. Narrative analysis involves examining the stories, myths, and cultural traditions that are passed down through generations within a community (Herman & Vervaeck, 2019). In this research, narrative analysis was used to examine the impacts and experiences surrounding the small-scale mining operations that the community has practiced for generations. By analysing the narratives, the researcher identified common themes and patterns in the narratives that provided insight into environmental, economic, and social implications on small scale mining practices.

Thematic analysis, on the other hand, involves identifying themes or patterns in the data collected during fieldwork (Labra, Castro, Wright & Chamblas, 2020). The themes can be identified based on the content of the data or based on the research questions and objectives (Labra, Castro, Wright & Chamblas, 2020). In this research, thematic analysis was used to identify the key themes and patterns in the data related to the small scale mining relations with the microfinance interventions including their historical and current practices, perceptions, challenges and opportunities related to their day to day operations and livelihoods.. The themes were then used to analyse how the small-scale mining relationship with the microfinance interventions has changed over time and how this has impacted their livelihoods and well-being. In this research, microfinance interventions were the variable while sustainable livelihoods being the dependent variable. Before developing the data, collection tools, the researcher identified the main themes that would be appropriate to obtain saturated data in the field and ensure to respond to the study objectives and research questions. This ensured that the data collection tools only focused on study objectives and research questions without collecting unnecessary information from the respondents and ensured that all the questions asked during the interviews were ethically appropriate.

3.9 Ethical considerations

The researcher used the Belmont Report (1979) and Nelson Mandela University policy on research ethics (2010) as a guide to ensure the ethical considerations were met. The Belmont Report outlines respect for the persons, beneficence, and justice as the basic principles that should guide the researcher when interacting with human subjects.
Informed consent was obtained from the research participants after the researcher informed them about the purpose of the investigation and any potential benefits, drawbacks, or risks involved (Laws *et al*., 2013). The researcher only engaged the informants in the study after the participant had read and comprehended the material on the consent form and signed it. The conversation was audio recorded only if the respondent gave the researcher consent to do so.
A risk and benefit evaluation were carried out to ensure that any ethical concerns were addressed, and the study did not hurt the participants (Laws *et al*., 2013). The researcher made efforts to secure the well-being of the research participants per the principle of beneficence, which strives to maximize possible benefits while minimizing possible harm. The principle of non-maleficence was also observed to protect the research participants in social research against any harm (De Vos *et al.*, 2012).Confidentiality and anonymity were also maintained throughout the study procedure to ensure the privacy of the research participants was safeguarded (Coffelt, 2018). Through this, personally identifiable information in the data was segregated out or changed using pseudonyms to protect anonymity throughout the course of the study.
In summary this chapter adopted the constructivist paradigm, which emphasised on understanding participants' knowledges and co-constructing knowledge, presents a suitable methodological foundation for this study. By concentrating on qualitative data collection through interviews, FGDs, and participant observation, approach will enable an in-depth discovery of the role of microfinance in assisting the sustainability of small-scale miners in Mukaradzi. Ethical considerations remained a precedence throughout the research process to safeguard participants' rights, privacy, and well-being are protected. Through these methods, the study aimed to generate perceptions that inform the growth of a practical and community-focused model for leveraging microfinance to enhance the sustainability of small-scale mining in Mukaradzi.

3.10 Chapter three summary

The chapter summaries the methodology, theoretical framework, conceptual framework, and ethical consideration which are relevant to this study.

CHAPTER FOUR: FINDINGS AND DISCUSSION

4.0 Introduction

In this chapter, the findings regarding how Microfinance initiatives can be incorporated on the sustainability of small-scale miners in Mukaradzi have been discussed. Furthermore, the barriers and opportunities for small-scale miners in Mukaradzi will be presented. The impact of microfinance on their operational sustainability will be contextualized within the existing literature. This research aimed to improve community-wide sustainable mining methods by pivoting on funding through microfinance. The objective of this chapter was to present a thorough summary of the conclusions drawn from the qualitative data collected through focus groups, semi-structured interviews, and observational techniques. The first section of the chapter provided context for the data analysis by describing the participants' demographic features, the data presentation, which was organised according to major themes that surfaced from the analysis.

4.0.1 Demographic Characteristics of Participants

For the data analysis in this study, the demographic details of the participants offered crucial context. The following essential traits were listed:

4.0.2 Age Distribution

Participants' ages ranged from 20 to 50 years, with an average age of 35 years, representing a more youthful age in this sector.

4.0.3 Gender

Approximately 90% of the participants were male, reflecting the industry's heaviness and reliance on manpower as these mines are informalized. The 10% shows that even though women are incorporated, there are less represented.

4.0.4 Educational Background

Around 40% of participants went through secondary education, with only a quarter of them attaining the required pass rates. showing low levels of literacy in that Mukaradzi area. Many participants reported gaining knowledge about mining through experience on the job than having gone to school to learn about mining.

4.0.5 Experience in Mining

The participants' degrees of experience varied, but the majority had been mining since they attained 18 years of age as mining is the main activity in Mukaradzi.

4.1 Research Objectives Revisited and detailed findings

a) To identify the specific financial and operational challenges faced by small-scale miners in Mukaradzi.
b) To determine the current state of microfinance initiatives catering to small-scale miners and assess their effectiveness.
c) To propose a tailored microfinance model that addresses the financial needs of small-scale miners in Mukaradzi, fostering sustainable practices.

4.2 A comprehensive overview of the findings

4.2.1 Collateral terms and sources of funds by small scale miners

The findings revealed that the greater percentage for small scale miners fund their mining activities with their own resources as well as money from families and friends as it is difficult for them to secure funding from bank loans due to t collateral issues. In as much as the research findings reflected that small-scale miners use their own funds to run their day to day operations these funds are not enough to cover all the expenses related to the running of the industry. In a discussion with miners one discussant say *"…. we have little to no access to formal banking*

services due to collateral issues unlike in other countries like Tanzania whereby the banking system allows third parties guarantees on bank loans." Therefore, making microfinance a close alternative for small scale miners in terms of funds access as it is flexible as compared to formal banking systems. To add on the above a respondent says *"....we have resorted to microfinance services as the requirements for loans are relaxed for us small scale miners unlike the banking system where the requirements are pricey or far-fetched to what we can get."* The testimonials above reflects the collaterals terms issues which often restrain small scale miners accessing banking loans to finance their mining operations for day to day. Thus, making microfinance a viable option in the sector as it encourages small scale miners to get loans to meet the demanding expenses for the industry. The facility of loan access and other microfinance related products allows improvement in productivity in mining and the other services that are microfinance related services are micro-leasing and micro insurance which is a significant component to the small-scale miners' sustainability. Adamant requirements foist by formal institutions in finance makes it challenging for small scale miners in Mukaradzi to operate efficiently especially the financial documentations and collateral issues. Discussion with miners have shown that most run informally, needing the legal identification and credentials essential to meet the requirements for loans, for instance land title deed, proof stable income as well as valid mining licenses. These blocks eliminate miners from admittance orthodox banking services, obliging them to depend on casual sources of funding, comprising of high interest loans from local money lenders, loans from family and friends, personal saving. In as much as these casual provisions offer short-term respite, they habitually come with unmaintainable reimbursement terms, prolonging series of debt and financial uncertainty. A repeated premise amongst participants was the lack of collateral-based loaning models in delivering the needs of small-scale miners. Several miners articulated weariness with financial institutions' harsh requirements for immobile assets, like real estate, which most of them do not have. One miner stated, *".... they want us to give things like cars and houses as guarantee, but most of us do not have such possessions yet all we have is our labour and the faith for better equipment."* This response points out a divide between usual financial models and the experiences of small-scale mining. More so, miners emphasized worries over high-interest tariffs and the petite reimbursement periods often allied with loans, even from microfinance organisations. Some miners upstretched anxieties about greedy loaning practices by informal financiers, who make the most of miners' despair for fast cash, leading to manipulative measures

where miners are involuntary forced to sell their yield at underrated prices to refund debts. Women miners face further obstacles, involving gender prejudice in getting funds and being deemed less responsible due to societal partialities. Nevertheless, a few miners who had worked with cooperatives have been recounted marginally better access to funds, as cooperatives loch resources and work patrons for group credits, decreasing the obligation of singular collateral obligations. Notwithstanding these peripheral victories, there is a need for financial replicas custom-made to the exclusive needs of small-scale miners, accentuating suppleness, compact surety requirements, and reasonable settlement terms to permit them to capitalise in sustainable mining operations and advance their livelihoods.

4.2.2 The role of microfinance in the SSM

The research findings steered that most of the participants greatly agreed that microfinance would affect helpfully on their mining production. Revelation is that mining causes countless health peril due to unsuitable use of operational equipment. Microfinance offers entree to prolificcapital for the underprivileged, which together with human capital, attended via education and training, facilitates people to get out of poverty. During the establishment of substantial capital torelegated communities, self-respect is transformed as this can allow a person to partake at economic and societal levels that could not be formerly accomplished.

The role of microfinance in establishing small-scale mining in Mukaradzi has arose as both life changing and restricted, dangling on the convenience and structure of the financial products recommended. Many miners testified that microfinance institutions (MFIs) are amongst the few formal financial institutions keen to engross with their operations, offering small loans that assist in covering abrupt operational needs, like the purchase of tools, fortifying protection gear, and meeting basic sustenance costs during off-peak production phases. For some miners, microfinance has been a support, permitting incremental developments in production through the procurement of more effectual equipment or enabling modification into secondary income brooks like trade and agriculture which soothe household incomes. Furthermore, women emancipation is one of the microfinance objectives. One interviewee argues *"…. that enablement cannot be conferred by a bystander but must be asserted by those pursuing emancipation through a continuing process of consideration, investigation, and combat. Women need acknowledgement as they are inhibited by the beliefs, customs, norms, and values through which societies distinguish between women and*

men." Therefore, economic development can only be attained by improving access to aspects of production, by enabling women to make them self-dependent However, viewpoints from miners also emphasize various worries that restrict the efficacy of microfinance interferences A primary matter is the incongruity between loan reimbursement terms and the changeable nature ofmining revenue trends, where interruptions in gold yield or oscillation market prices make it problematic to stick to fixed refund schedules. One miner stated dissatisfaction, asserting, *"the loans are valuable, but they do not recognize that we do not continually make money constantly. If the mine does not yield for a month, we grapple to repay on time."* Additionally, the quite highinterest rates correlated with microfinance loans regularly eat into the prosperity of small-scale mining undertaking, preceding some miners to examine whether the debt is worth the minimal gains. On the other hand, some miners upraised apprehensions about the inadequate scale of the loans provided by MFIs, which are often inadequate to invest in larger-scale enhancements, like streamlining and bulk material procurements that might substantially advance operations. Despite these difficulties, miners recognised the potential of microfinance to assist as a spur for sustainability, predominantly when tied with capacity-development enterprises like cooperative-based lending models and financial literacy training, which reduce risks and improve loan accessibility. There is an agreement among miners that, while microfinance has made an evocative contribution to their operations, significant modifications are obligatory to bring into line its services with the distinct stresses and asymmetrical cash streams of the small-scale mining sector in Mukaradzi.

4.2.3 The role of SSM to economic development

The research demonstrates that small scale mining activities in Zimbabwe are a source oflivelihood for insignificant rural populations, thus the significance of MFI funds in financing the acts of this sector. Small-scale miners in Mukaradzi subsidise substantially to local and national economic development, a fact often conceded with honour by the miners themselves but underrated by legislators and larger economic stakeholders. Miners emphasized their role as key merchants of gold, which absolutely adds to Zimbabwe's export revenue and foreign currency income, a fundamental viewpoint of the country's hostile economy. Many respondents accentuated the sector's capability to grant employment prospects in a setting where formal jobs are rare, withone miner expressing, *"If it weren't for mining, most of us would have nonentity to do. We hire people to help us mine, process, and transport materials. It's how whole families live here."* In

addition to direct employment, miners indicated out their secondary supplies to the local economy, like supporting transport operators, small business and traders that serve to the mining community. For instance, local vendors retail food and tools near mining sites, promoting from the miners' consuming power. However, miners also articulated concerns about their constrained acknowledgement and help from the government, regardless of their economic contributions. They bewailed the absenteeism of infrastructure development in Mukaradzi, like healthcare facilities, education, and roads which they believe their activities must help sustain via levies and taxies. One participant commented, *"...We recompense fees to the authorities, but we do not see any development in this area from the money we pay*." Environmental deprivation, a by-product of small-scale mining, which was also raised as a cause of concern by miners, who conceded the necessity for more sustainable practices but accentuated the absence of resources to invest in biodegradable technologies. Women miners articulated the two-fold onus of adding economically while facing gender prejudice, restricting their opportunities to increase their operations. Notwithstanding these encounters, miners continue to be firm about their essential role in economic development, calling for formal appreciation, better resource distribution, and support systems to intensify their contributions while tackling the socio-economic and environmental matters tied to their work. This underlines the ability of small-scale mining as a foundation stone of Zimbabwe's economy, given its incorporation into broader economic frameworks is operated inclusively and sustainably.

4.3 Financial and Operational Challenges Faced by Small-Scale Miners in Mukaradzi

4.3.1 Limited Access to Capital

4.3.1.1 Lack of Collateral

One of the most pressing challenges faced by small-scale miners in Mukaradzi is the limited access to capital. This financial barrier stems from various factors, with many small-scale miners not possessing the necessary assets to secure loans from traditional financial institutions. For one to access funding, the funders require assets as collateral in case one fails to repay the loans, as many of these small scale miners are informal This lack of collateral prevents them from accessing vital funding needed for equipment and operational expansion.

One participant expressed deep frustration over this situation, stating, "*Without collateral, I feel trapped. I want to expand my operations and hire more workers, but I simply can't access the*

funds." This sentiment highlights the emotional and operational limitations imposed by financial constraints, as Participant 1 recognizes the potential for growth but is hindered by a lack of financial backing.

Another Participant echoed these concerns, noting, "*I have a family to feed, and I want to invest in better equipment to increase our yield. But banks won't even look my way without collateral."* This statement underscores the personal stakes involved in the mining business, where financial challenges directly impact livelihoods and the ability to provide support for family.

Furthermore, another participant pointed out a broader systemic issue: *"The financial institutions don't understand our work. They see us as a risk, but we are the backbone of the local mining industry."* This statement brings to light the disconnect between financial institutions and small-scale miners, highlighting how traditional funders practices can overlook the potential of informal economies. Without capital, these small-scale miners are unable to invest in necessary equipment or technology, which could enhance their productivity and efficiency. This stunts their growth potential and keeps them trapped in a cycle of low output with some eventually failing within few. It was worth noting that Small-scale mining has the potential to create jobs in local communities, but without access to funding, miners cannot expand their operations, which ultimately limits employment opportunities for others in the area. The broader economic implications are significant as Small-scale miners contribute to local economies, but their inability to grow restricts overall economic development in Mukaradzi. This lack of growth can lead to increased poverty and reduced quality of life for community members.

4.3.2 Credit History

Another significant financial challenge faced by small-scale miners in Mukaradzi is the lack of a formal credit history. This absence presents considerable obstacles in securing financing from banks and other financial institutions, which rely heavily on established credit records to evaluate the risk associated with lending. Since most small-scale miners operate informally, often relying on personal networks for financial support rather than formal banking systems. Consequently, they do not develop a credit history that microfinance institutions use to assess creditworthiness. This gap in their financial profiles further exacerbates their struggle to obtain loans, which are crucial for sustaining and growing their operations.

Participant 1 articulated this struggle, stating, *"I have never taken a loan before, so when I approached the bank or microfinance companies, they just turned me away. They only trust people with a credit history."*

This experience reflects the systemic barriers that first-time borrowers face, where the lack of prior borrowing history can lead to immediate rejection, regardless of an individual's potential or intentions. The institutions fear their ability to repay the money due to their informality.

Participant 2 shared a similar sentiment, saying*, "I've been mining for years, but without a credit score, I feel invisible to the financing institutions. They don't see my hard work; they only see numbers."*

This remark underscores the frustration many small-scale miners feel when their dedication and labour are overshadowed by rigid criteria from these institutions. Participant 2's comment highlights the disconnect between the realities of small-scale mining and the criteria set by financial institutions.

Participant 3 pointed out the broader implications of this situation, noting, *"It's not just about me; many of us are in the same boat. We need a way to prove our worth beyond what the microfinance institutions see."*

This statement emphasizes the collective struggle of miners, suggesting a need for alternative methods to demonstrate creditworthiness, such as community endorsements or alternative lending models tailored to informal economies. Without a credit history, miners find it nearly impossible to access loans, which limits their ability to invest in necessary equipment and expand their operations. Furthermore, the inability to secure financing stifles the growth potential of small-scale mining operations. This stagnation affects not only the miners but also the local economy, as growth in this sector can lead to increased employment and economic activity. In the absence of formal credit options, miners often turn to informal lending sources, which charge exorbitant interest rates, further entrenching them in cycles of debt and financial instability. The lack of engagement with formal institutions may lead to a gap in financial literacy, preventing miners from understanding their options or developing skills needed to manage credit effectively.

4.3.3 Regulatory Barriers

Small-scale miners in Mukaradzi encounter regulatory barriers, particularly the complex licensing processes required to operate legally. This convoluted and often time-consuming process creates significant obstacles for miners who wish to start or expand their operations. The process of obtaining licenses to operate can be convoluted costly, and time-consuming. Miners often face monetary and bureaucratic hurdles that delay their ability to legally start or expand their operations Many miners find the requirements overwhelming, as they often lack the resources and knowledge to navigate the intricate regulatory landscape.

Participant 1 expressed exasperation with the licensing process, stating, "*I started the application over a year ago, and I'm still waiting for approval. This is time I could have spent working yet I'm spending it on regular visits to the ministry of mines which is draining me financially, yet I don't have the money.*"

This frustration highlights the impact of bureaucratic delays on miners' operations, as prolonged waiting periods can prevent them from capitalizing on market opportunities and generating income.

Participant 2 shared a similar experience, noting, "*The paperwork is endless, and every time I think I'm close, they ask for more documents. It feels like a never-ending cycle*." This comment underscores the inefficiency and complexity of the licensing process, which can discourage miners from even attempting to formalize their operations. It reflects a systemic issue where the regulatory framework does not accommodate the realities of small-scale mining.

Participant 3 highlighted the economic implications of these regulatory barriers, stating, "*By the time I get my license, the market may have changed, currently gold prices are at their peak, I need to be able to react quickly, but these delays hold us back.*"

This perspective emphasizes the need for agility in business operations, particularly in a sector where market conditions can fluctuate rapidly. Delays in licensing can hinder miners' ability to respond to these changes, ultimately affecting their competitiveness and profitability. The extended time required to obtain licenses can stifle miners' ability to start or expand their operations, limiting their growth potential and financial viability. Furthermore, the bureaucratic nature of the licensing process often leads to increased costs, as miners may need to pay for

additional assistance, legal advice, or even bribes to expedite the process. The complexity and length of the licensing process can discourage miners from pursuing formal licenses altogether, leading them to operate informally, which can expose them to legal risks and exploitation. Even the microfinance will view them as risk and will be reluctant to offer lending facilities to the small miners in Mukaradzi.

4.3.4 Inefficient Technologies

Small-scale miners in Mukaradzi face significant challenges due to the use of outdated equipment and inefficient mining practices. These inefficiencies not only affect their profitability but also raise critical sustainability concerns that can have long-term consequences for both the miners and their communities.

4.3.4.1 Outdated Equipment

Many small-scale miners rely on traditional mining methods and outdated equipment, which severely limits their operational efficiency. This reliance on older technologies results in lower yields, making it difficult for miners to compete in a market that demands higher productivity.

Participant 1 expressed frustration over this issue, stating, "*I work hard every day, but with my old equipment, I resort to manual processes and I can't produce enough to make a decent living. Some of our mines have low samples and therefore it's a game of volumes to win more. Now it feels like I'm stuck in a cycle of poverty*."

This statement highlights the direct link between outdated technology and the miners' economic struggles, as insufficient yields hinder their ability to achieve financial stability.

Participant 2 echoed this sentiment, noting, "*I want to invest in better machinery, but I can't find any microfinance options. When I want funding, the interests are an arms and length and to make matters worse, the loan requirements remain a dream to all of us. Without access to affordable funding, I'm forced to stick with what I have, old compressors, manual jack hammers without water spray which are causing blasters Tuberculosis diseases here.*"

This comment underscores the critical funding gap created by the lack of microfinance options, which limits miners' ability to upgrade their equipment and adopt more efficient practices.

Participant 3 added, "*Using old methods not only affects my profits but also takes a toll on the environment. I know I should be doing better, but I just can't afford it."*

This perspective emphasizes the broader implications of outdated equipment, as inefficient practices contribute to environmental degradation, further complicating the sustainability of their operations.

4.3.5 Environmental Degradation

The inefficiencies in mining practices often lead to significant environmental damage, including deforestation, soil erosion, and water pollution. These issues not only pose risks to local ecosystems but can also result in community backlash and regulatory penalties.

Participant 1 remarked, "*When we use outdated methods such as use of mercury, acid and cyanide, we end up ruining the land, polluting the rivers, and killing livestock. This affects everyone, not just us miners*."

This statement highlights the interconnectedness of financing, and mining practices and community health, indicating that environmental degradation can lead to negative repercussions for the entire community.

Participant 2 noted the potential backlash from the community, stating, *"If we don't take care of the environment, the people here will turn against us, in fact, they are now against our operations as every now and then deaths of both people and livestock are losing their lives upon consuming contaminated water in rivers near the mines. We need to be more responsible, but without the means to upgrade, it's difficult."*

This concern reflects the pressure miners face to balance their operations with environmental stewardship, which is increasingly important in today's regulatory climate but necessitated by funding.

Participant 3 pointed out, *"The fines for environmental damage can be crippling. We need to adopt better practices, but that requires investment we don't have, I pray we get microfinance which specifically suit us the small guys."* This statement underscores the financial implications of environmental regulations, emphasizing how the lack of access to microfinance restricts miners from adopting more sustainable technologies and practices. The absence of microfinance options prevents miners from investing in modern equipment and sustainable practices, perpetuating a cycle of inefficiency and environmental harm.

4.4. The effectiveness of the Current Microfinance Initiatives Catering to Small-Scale Miners

4.4.1 Limited Outreach

One of the significant challenges facing the effectiveness of current microfinance initiatives aimed at supporting small-scale miners is limited outreach.

4.4.1.1 Geographical Constraints

The current microfinance institutions (MFIs) are primarily concentrated in urban areas, leaving remote mining communities underserved. This geographical gap in service delivery means that small-scale miners often do not have access to the financial resources they need.

Participant 1 pointed out, "*The nearest microfinance office is in Mt Darwin town, hours away from where I'm mining. I can't just drop everything to go apply for a loan which happens to also take days. I have a lot of work to do here*."

This statement illustrates the logistical challenges that miners face in accessing financial services, which can significantly hinder their ability to secure funding for necessary equipment and operational improvements.

Participant 2 echoed this concern, stating, "*Even if I wanted to apply, the travel costs and time are prohibitive, to make matters worse, I don't want the risk of carrying hard cash in such long distance. It's too risky for me to carry cash around. It feels like these services are designed for people in the cities, not for us.*"

This remark highlights the disparity in access between urban and rural areas, emphasizing how geographical constraints create barriers that prevent miners from engaging with MFIs.

Participant 3 added, "*We need these services to come to us. If they can't reach us, how can we benefit?*" This sentiment underscores the need for MFIs to develop strategies to extend their reach into remote communities, ensuring that small-scale miners are included in the financial ecosystem.

4.4.1.2 Awareness and Education

In addition to geographical constraints, a lack of awareness about microfinance products and their benefits further exacerbates the issue. Many miners are either unaware of available options or hold misconceptions that deter them from seeking out these services.

One participant remarked, *"I've heard about microfinance, but I don't really know how it works. It sounds complicated.*" This statement highlights the confusion and scepticism that can arise when

potential borrowers lack clear information about microfinance products, which can prevent them from taking advantage of these opportunities.

Participant 2 noted, "*Some people think microfinance is just another way for banks to take advantage of us. We need better education on how these services can actually help.*"
This perspective emphasizes the importance of providing education and outreach to dispel myths and improve understanding of microfinance benefits among miners.
This limited outreach results in many miners being unaware of the microfinance options available to them, leading to underutilization of these critical financial services. The concentration of MFIs in urban areas creates inequitable access to financial resources, perpetuating disparities between rural and urban miners and limiting overall economic growth in remote communities. Without access to microfinance, many small-scale miners struggle to invest in necessary equipment and sustainable practices, which can hinder their operational efficiency and profitability.

4.4.2 Product Misalignment

Another challenge affecting the effectiveness of microfinance initiatives aimed at small-scale miners is product misalignment, particularly concerning high interest rates. These financialbarriers can make it very difficult for miners to repay loans, often leading to a cycle of debt that undermines their operations. Many microfinance institutions (MFIs) charge interest rates that are perceived as prohibitively high by small-scale miners. This situation creates a financial burden that can be unsustainable, especially for miners whose income is often irregular and dependent on fluctuating market conditions.

Participant 1 expressed concern about the impact of high interest rates, stating, *"I took a loan to buy new equipment, but the interest is so high that I'm struggling to keep up with repayments. At 15% per month, that is 180% per annum, we are chocked and can't survive these rates. It feels like I'm just digging myself deeper into debt."*
This statement highlights the precarious financial position many of these small-scale miners find themselves in, where the cost of borrowing can outweigh the benefits of the investment.
Participant 2 added, "*If I have to pay back so much interest, it takes away from what I can reinvest in my business. Personally, I feel I'm being robbed. It shouldn't be this hard to get help*."

This remark underscores the frustration with the microfinance model, which, instead of providing a lifeline, can become a source of financial strain that stifles growth and reinvestment.

These high interest rates can trap miners in a cycle of debt, where they take out new loans to pay off old ones, ultimately jeopardizing their financial stability and operational viability. The cost of servicing high-interest loans can significantly reduce profit margins, limiting miners' ability to reinvest in their operations and leading to stagnation.

4.4.3 Mixed Effectiveness

The effectiveness of microfinance initiatives catering to small-scale miners in Mukaradzi presents a mixed picture. While some miners have experienced positive outcomes from accessing microloans, others have faced significant challenges, particularly in repayment. This duality highlights both the potential benefits and the limitations of current microfinance offerings.

4.4.3.1 Positive Outcomes

Many small-scale miners have reported that access to microloans has enabled them to purchase better equipment and technology, resulting in increased productivity and profits. These loans have provided a much-needed financial boost that allows miners to upgrade their operations and improve their overall efficiency.

Participant 1 shared, "*After I received a microloan, I was able to buy a new drilling machine. My production doubled, and now I can support my family much better."* This statement illustrates the tangible benefits that microloans can provide, enabling miners to enhance their operations and financial well-being.

Participant 2 highlighted the role of financial education offered by MFIs, stating, "*The training I received helped me manage my finances better. I now keep track of my expenses and savings, which has made a big difference."* This perspective underscores the importance of financial literacy as a complement to access to credit, allowing miners to make informed decisions about their finances.

Participant 3 added, *"With the right tools and knowledge, I feel more confident in my mining business. It's empowering to know I can grow."* This sentiment reflects the transformative potential of microfinance when combined with education, fostering a sense of agency among miners.

4.5.1 Challenges in Repayment

Despite these positive outcomes, many miners have encountered difficulties in repaying their loans, primarily due to high interest rates and rigid repayment terms. These challenges can create a cycle of debt, undermining the financial stability that microloans are intended to support.

Participant 1 expressed concern about repayment challenges, stating, *"I took out a loan to improve my business, but the repayment terms are so strict that I can't keep up. Now I'm in debt."* This statement highlights the risks associated with borrowing when repayment conditions are not flexible, leading to financial distress.

Participant 2 noted, *"The interest rates are too high for us. It's hard to make a profit when we have to pay back so much."* This remark underscores the financial strain that high interest rates can impose, making it difficult for miners to generate a sustainable income while servicing their loans.

While microloans can empower some miners to improve their operations, others may find themselves trapped in a cycle of debt due to high interest rates and inflexible repayment terms. The role of financial education is critical, as it can help miners manage their finances effectively and make informed decisions about borrowing and repayment. The mixed effectiveness of microfinance initiatives highlights the need for more flexible lending solutions that consider the unique circumstances of small-scale miners, including fluctuating incomes and seasonal work patterns. Ensuring that microfinance initiatives are genuinely beneficial requires a balance between providing access to credit and establishing fair repayment terms that support long-term sustainability for miners.

4.6 A Proposed Tailored Microfinance Model That Addresses the Financial Needs of Small-Scale Miners in Mukaradzi, Fostering Sustainable Practices

4.6.1 Flexible Loan Products

4.6.1.1Affordable Interest rates

Affordable interest rates, which are essential for encouraging sustainability and good financial practices, should be given top priority in a customised microfinance model for Mukaradzi's small-scale miners. Miners are frequently burdened by high interest rates, which make it difficult for

them to pay back loans and make the investments in operational upgrades they need. Microfinance organisations can guarantee that miners can reinvest in their operations in addition to being able to pay off their loans by providing more reasonable interest rates. Miners may be more inclined to embrace sustainable practices, such as purchasing environmentally friendly machinery and technologies, if borrowing costs are lower. Additionally, miners may concentrate on long-term planning and expansion rather than just getting by daily when they are not under as much financial strain.

4.6.1.1 Seasonal Repayment Plans

The proposed model includes loan products with repayment schedules aligned to miners' income cycles. Miners experience booms during dry seasons where there is little to no rains and low production costs on electricity and fuel. In this period, their likelihood to repay is high and therefore plans that allow them to repay in these periods are ideal. This flexibility would allow miners to repay loans during peak income periods, reducing financial strain during lean times.

4.6.2 Flexible payment options that guarantee Microfinance returns

The markets where miners sell the minerals may be used as collateral in such a way that microfinance providers can recoup their money without any fear that miners may divert money to other uses.

4.6.2.1 Micro-insurance Options

Incorporating insurance products that protect against market fluctuations and operational risks could help miners manage uncertainties in their income. Small-scale miners often deal with volatile commodity prices, which can significantly impact their earnings. Micro-insurance products that protect against price drops can help stabilize income. For instance, if the price of gold falls unexpectedly, insurance can provide compensation, ensuring that miners can cover theirbasic expenses and continue their operations without severe financial strain. Mining is fraught with operational risks, such as equipment failure, accidents, or natural disasters. Micro-insurance can offer coverage for these risks, allowing miners to repair or replace equipment without incurring crippling costs. This protection is particularly important for small-scale miners who may lack the financial resources to absorb unexpected expenses.

4.6.3 Integration of Financial Education

4.6.3.1Training Programs

The model emphasizes the importance of financial literacy and business management training. Providing miners with the skills to manage their finances effectively can empower them to make informed decisions about investments and savings. Financial literacy equips miners with the knowledge needed to understand various financial products, such as microloans, micro-insurance, and investment opportunities. By fostering a solid understanding of these products, miners can make better decisions that align with their financial goals and risk tolerance. Furthermore, training programs can teach miners essential skills in budgeting and financial planning. By learning how to create and manage budgets, these small-scale miners can track their income and expenses, allocate resources effectively, and plan for future investments. This discipline can lead to improved financial stability and sustainability in their operations. Financial education can provide insights into sound investment strategies, helping these miners assess risks and potential returns. This knowledge can encourage them to invest in ways that enhance productivity and profitability.

Financial education can provide essential guidance on managing debt, including understanding interest rates, repayment terms, and the importance of not overextending oneself financially. This knowledge can help miners avoid falling into cycles of debt that can jeopardize their livelihoods.

4.6.3.2 Sustainable Mining Practices

Education on sustainable mining practices is crucial for small-scale miners in Mukaradzi, as it equips them with the knowledge and skills necessary to minimize environmental impacts while enhancing the long-term viability of their operations. By learning about techniques such as responsible resource extraction, efficient waste management, and the use of eco-friendly technologies, miners can reduce deforestation, soil degradation, and water pollution associated with traditional mining methods. Training programs can also emphasize the importance of biodiversity conservation and the adoption of practices that restore and rehabilitate mining sites after extraction. This not only helps protect local ecosystems but also fosters community acceptance and support, ultimately leading to a more sustainable and profitable mining industry. By integrating sustainable practices into their operations, miners can ensure that they not only meet current economic needs but also safeguard resources for future generations.

4.6.4 Support for Cooperative Structures in Small-Scale Mining

4.6.4.1 Formation of Cooperatives

Microfinance institutions should encourage small-scale miners to form cooperatives which can significantly enhance their bargaining power and economic resilience. By banding together, miners can collectively gather the necessary collateral required for borrowing. Furthermore, they negotiate better prices for their products, leveraging their combined volume to secure more favourable terms from buyers. This collective approach not only empowers individual miners but also levels the playing field against larger mining operations that often dominate the market. Additionally, cooperatives can facilitate access to shared resources, such as marketing expertise and distribution networks, which can further enhance their market presence and profitability. Formation of cooperatives will encourage responsibility, accountability and transparency amongst the miners and therefore giving the microfinance less risk and relief on repayments

4.6.4.2 Collective Investment

Cooperatives also enable collective investment, allowing members to pool their financial resources for significant capital expenditures that would be challenging to manage individually. This pooled investment can be directed towards acquiring better equipment and technology, which is essential for improving productivity and operational efficiency. For instance, cooperatives can invest in modern mining machinery, which not only increases extraction rates but also minimizes environmental impacts through more efficient practices. Furthermore, shared investments in sustainable technologies, such as renewable energy sources or cyanidation plants, can enhance the sustainability of mining operations, reducing long-term costs and regulatory risks.

Cooperatives can enhance access to financing options that may be unavailable to individual miners. Microfinance institutions are often more willing to lend to organized groups with shared accountability and clearer financial structures. Also sharing resources, cooperatives can lower operational costs through bulk purchasing of equipment, supplies, and services. This collective buying power can result in significant savings, allowing miners to reinvest in their operations.
By working together, miners can share knowledge and best practices, improving their technical skills and business acumen. This collaborative learning environment fosters innovation and

adaptability within the mining community. The collective approach fosters a sense of solidarity and shared responsibility, which is vital for maintaining operations over the long term.

4.6.5 Government Interventions

4.6.5.1 Government Partnerships

Establishing strategic alliances with microfinance service providers is crucial for the government. These partnerships can help create customised financial products that cater to miners' particular requirements and guarantee that they have access to the funding needed for long-term operations. Miners can obtain loans more easily if the government and microfinance organisations collaborate to increase knowledge of funding choices and expedite the application procedure. The government can also offer microfinance providers technical assistance so they can create creative financial solutions that consider the varying incomes and unique difficulties experienced by small-scale miners. In the long run, this collaboration can help the region's economy by creating a favourable regulatory environment that attracts investment in the mining industry.

4.6.5.2 Government Incentives

The government should put in place incentive programs, such tax incentives, in addition to collaborations with microfinance providers, to help small-scale miners as they work to meet specific profitability benchmarks. With the help of these incentives, miners may be able to modernise their equipment, reinvest in their companies, and embrace sustainable practices without having to worry about paying exorbitant taxes. The government can improve transparency and regulatory compliance by incentivising miners to formalise their businesses through tax relief. Because more successful miners will be able to invest in environmentally friendly mining methods, generate jobs, and promote community development, this assistance can also boost local economic growth.

4.6.5.3 Reduction of Government Compliance fees

The government should also think about reducing the compliance costs related to mining licenses and permits. Small-scale miners may find it difficult to operate legally and sustainably due to high compliance costs. The government can lessen miners' financial burden by lowering these costs, which will make it easier for them to get the required permits and follow rules. In addition to

helping miners formalise their operations, this decrease in compliance costs fosters a compliance and environmental stewardship culture. In the end, reducing compliance fees can motivate more small-scale miners to follow ethical standards, resulting in a more robust mining industry that boosts the local economy and reduces environmental effects.

4.7 Chapter four summary

In summary the chapter presented the findings of the study which clearly articulated the challenges and opportunities associated with small scale miners in Zimbabwe airing out the perceptions, concerns, barriers the miners often face during their operations. It also gives a highlight the views of the miners and other stakeholders on how microfinance institutions can be detrimental in sustaining mining operations. It also brought forward a working model tailored for the Mukaradzi small scale miners.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter integrate the outcomes of the study to represent extensive inferences and provide tortious proposals associated with the research objectives. It exhibits on the incorporation of microfinance as a practical mechanism to tackle the financial and functioning challenges faced by small-scale miners in Mukaradzi, Mt Darwin, Zimbabwe. By pondering the study's findings within prevailing literature and the wider framework of sustainable livelihoods and financial philosophies, this chapter underlines the probable of a custom-made microfinance model to economic sustainability and advance livelihoods amongst miners. The commendations attainable aim to tackle recognised difficulties and influence opportunities to heighten the sustainability of small-scale mining. These proposals are aimed to direct microfinance institutions, policymakers, and other stakeholders in executing practical intermediations to reinforce the segment while encouraging environmental guardianship and socio-economic inclusion. Therefore, this chapter acts as a calculated roadmap for developing the incorporation of microfinance into small-scale mining operations, guaranteeing long-term effects and alliance with regional and national development goals.

5.1 Conclusion

The proposed tailored microfinance model for small-scale miners in Mukaradzi addresses critical financial needs while fostering sustainable practices. By prioritizing affordable interest rates, flexible repayment options, and the incorporation of micro-insurance, this model aims to alleviate the financial burdens that miners face, enabling them to invest in their operations and adopt environmentally friendly technologies. Additionally, integrating financial education to thesesmall-scale miners enhances their capacity to manage their finances, make informed investment decisions, and implement sustainable mining practices. Supporting cooperative structures further strengthens the economic resilience of miners by giving them leverage, increasing their collateral base for loan applications, and increasing their bargaining power thereby facilitating collective investments. Finally, government interventions, including partnerships with microfinance

providers, incentive programs, and the reduction of compliance fees, are essential to create a positive environment for small-scale miners.

Furthermore, advocating for compulsory formalization of these small-scale miners increases their chances of accessing funding from microfinance institutions. Together, these components provide a comprehensive framework that not only supports the sustainability of small-scale miners but also largely contributes to the broader economic development and environmental stewardship of the region and the country's Gross Domestic product (GDP).

5.2 Recommendations

5.2.1 Implementation of Tailored Financial Products

Microfinance institutions should development loan products with lower interest rates and flexible repayment plans that align with the income cycles of small-scale miners to help reduce financial stress and encourage investment in sustainable practices.

5.2.2 Enhancement of Financial Education Programs

Microfinance institutions should continuously investment in financial literacy training to the small-scale miners. The training programs should be designed to equip miners with practical skills in budgeting, cashflow management, investment strategies, and sustainable mining practices. Working on collaborations with local organizations could help ensure these programs are relevant and accessible.

5.2.3 Promotion of Cooperative Formation

All stakeholders, including Microfinance institutions, NGOs, and government agencies, should actively promote the formation of cooperatives among miners. Providing resources and support for cooperative development enhances miners' collective strengthens their balance sheet which facilitates their access to financing.

5.2.4 Strengthening Government Partnerships

The government should work on establishing strategic partnerships with microfinance providers to create customized financial products tailored to the needs of small-scale miners. These collaborations should also include technical assistance to ensure the effective implementation of these products.

5.2.5 Incentivization through Tax Breaks and Compliance Fee Reduction

The government should implement tax incentives and further reduce compliance fees for small-scale miners to encourage formalization and investment in sustainable practices. This support will not only improve miners' financial stability but also enhance regulatory compliance and environmental stewardship which will strengthen relationships between the mining industry and the Mukaradzi community at large.

5.2.6 Integration of Micro-Insurance Options

There should be a development of sound micro-insurance products to protect miners against market fluctuations and mainly operational risks. This option will provide a safety net, helping miners manage uncertainties in income and ensuring the continuity of their operations.

5.2.7 Monitoring and Evaluation

The government should establish a framework for monitoring and evaluating the effectiveness of the microfinance model and its components. Regular assessments will assist in identifying areas for improvement and ensure that the model continues to meet the evolving needs of small-scale miners.

5.3 Proposed Model

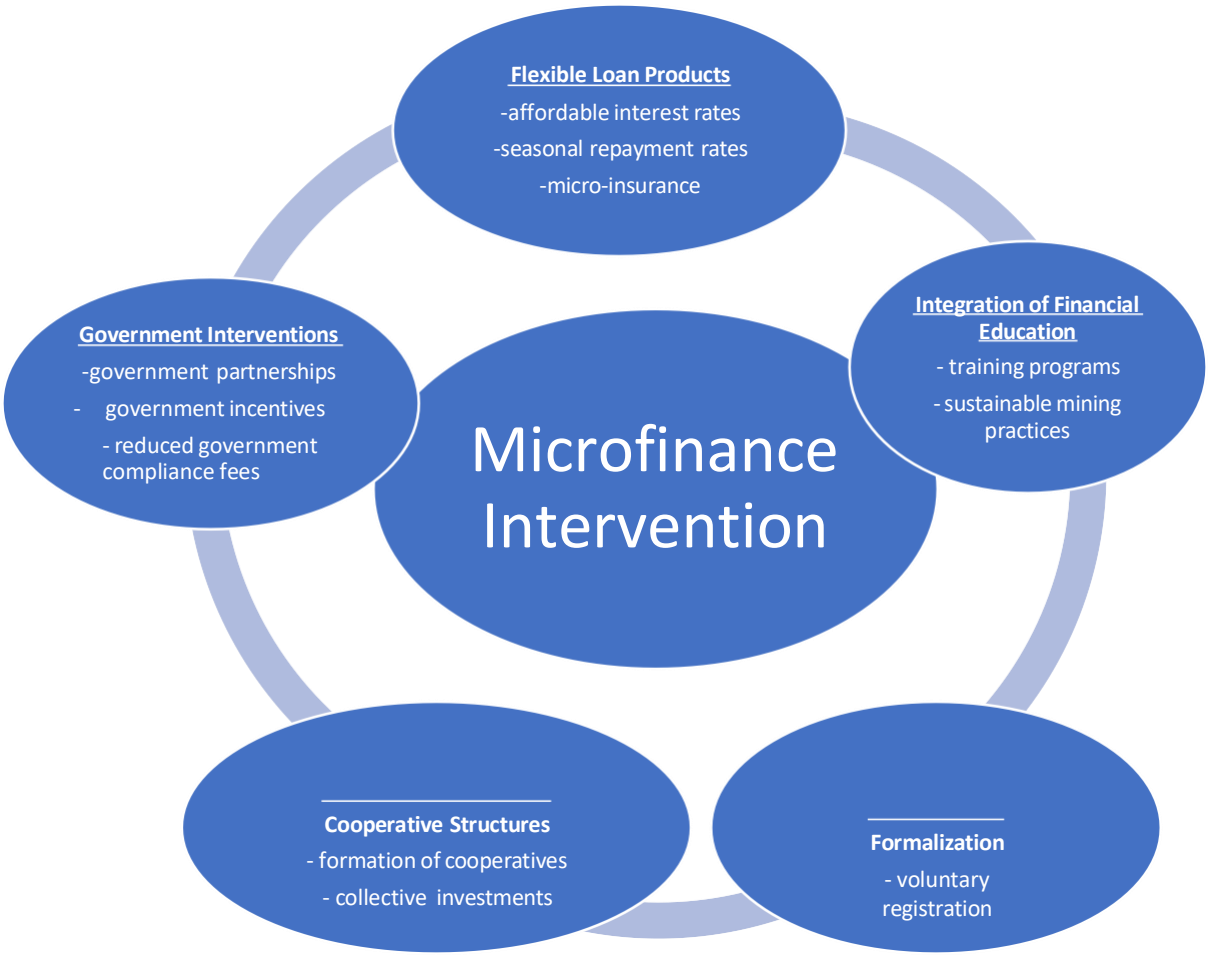


Figure 2:Proposed model for Mukaradzi small scale miners

This proposed tailored microfinance model for small-scale miners in Mukaradzi reiterates the need for affordable interest rates, flexible loan repayment plans, and micro-insurance options toalleviate financial burdens and encourage sustainable practices. By integrating financial education and promoting the formation of cooperatives, the model aims to enhance miners' financial literacy, strengthening Miners' collateral, and collective investment capabilities. Furthermore, strategic government partnerships and incentives, including tax breaks and reduced compliance fees, are essential to create a supportive environment that advocates for formalization and investment in eco-friendly mining practices. Overall, implementing this comprehensive approach will empower small-scale miners to thrive economically while ensuring the sustainability of their operations and the protection of local ecosystems.

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Appendix 1

Hello, my name Courage Kanyonganise a student at Bindura University Zimbabwe. I am conducting an academic study on **A working model for leveraging microfinance to support the sustainability of small-scale miners in Mukaradzi, Mt Darwin, Zimbabwe** a dissertation submitted to the Bindura University of ScienceEducation in partial fulfilment of the requirements for an executive master's in business leadership (EMB) degree qualification**.**Your participation in this study is voluntary and all the information provided shall remain confidential and used for purposes of this research only.

Section 1: Background Information

S.1.1 Demographic Information

1. Can you briefly share your role in the mining industry or financial sector?
2. How long have you been involved in small-scale mining or providing financial services?

S.1.2 Operational Context

3. What is the scale and nature of your mining operation? (For miners)
4. What kind of financial services does your institution provide to small-scale miners? (For financial stakeholders)

Section 2: Barriers to Sustainability

S.2.1 Financial Challenges

5. What are the main challenges you face in accessing financial resources for your mining activities?
6. How do you manage to fund your mining operations, especially during periods of financial strain?

S.2.2 Operational Constraints

7. What are the key operational challenges, such as equipment, infrastructure, or technology, that hinder your mining activities?
8. Do financial constraints play a role in limiting your access to these resources?

S.2.3 Regulatory and Policy Barriers

9. How do government regulations and compliance requirements impact your mining activities?
10. Are there any specific fees or permits that create a financial burden on your operations?

Section 3: Opportunities for Financial Inclusion

S.3.1 Microfinance Access

11. Have you ever accessed financial services such as microloans, savings schemes, or micro-insurance? If yes, what was your experience?
12. What financial products or services would you like to see tailored to the needs of small-scale miners?

S.3.2 Potential Improvements

13. In your view, what role can microfinance play in improving your operations and livelihoods?

14. Are there specific areas where microfinance institutions can provide better support?

Section 4: The Impact of Microfinance

S.4.1 Perceived Benefits

15. How do you think access to microfinance could impact your ability to sustain operations and adopt better practices?

16. Can you provide examples of how financial support has helped (or could help) improve your productivity or income?

S.4.2 Challenges with Microfinance

17. What challenges have you encountered when trying to access or repay microfinance loans?

18. Are there specific terms, such as interest rates or repayment schedules, that you find difficult to comply with?

Section 5: Perspectives on Cooperative Models

S.5.1 Collective Approaches

19. Are you part of any cooperative or collective group of miners? If yes, how has this affected your access to financial resources?

20. What role do you think cooperatives can play in improving financial access and operational sustainability for miners?

Section 6: Environmental and Social Sustainability

S.6.1 Sustainable Practices

21. Are you aware of any sustainable mining practices, and have you implemented any in your operations?

22. What role do you think microfinance can play in promoting environmentally sustainable mining methods?

S.6.2 Community Development

23. How do your mining activities contribute to the economic development of the Mukaradzi community?

24. What additional support would you need to enhance your contribution to the community's development?

Section 7: Recommendations

S.7.1 Suggestions for Improvement

25. What recommendations do you have for microfinance institutions to better support small-scale miners?

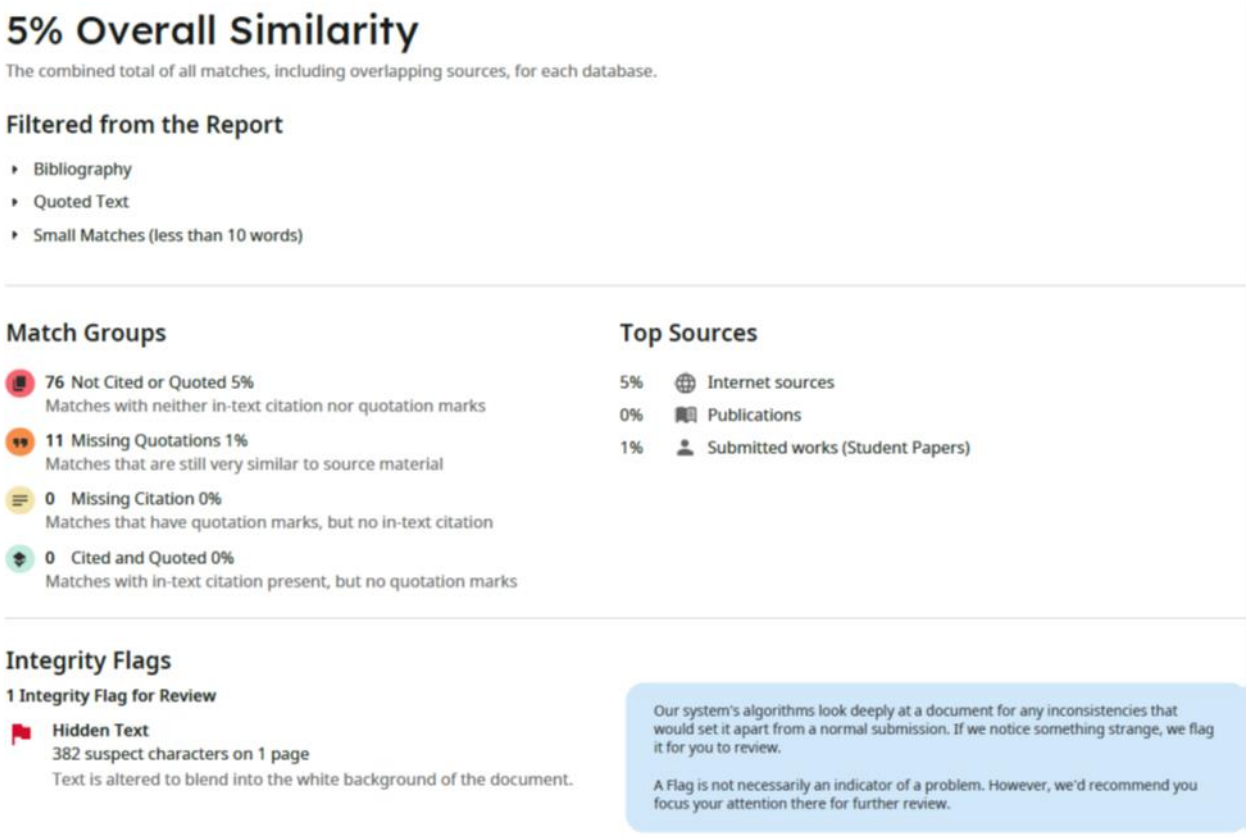
26. How can the government or other stakeholders work with microfinance providers to address your challenges?

Section 8: Outlook

27. Where do you see the future of small-scale mining in Mukaradzi with improved access to financial services?

28. What is your vision for your mining operations in the next 5–10 years?

Turnitin Report



Research letter

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TO WHOM IT MAY CONCERN

REF: REQUEST TO CARRY OUT RESEARCH: COURAGE KANYONGANISE B232420B, EXECUTIVE MASTER OF BUSINESS LEADERSHIP (EMB) PART 2.1 STUDENT

This letter serves to confirm that **Courage Kanyonganise B232420B** is an Executive Master Of Business Leadership (EMB) student in the Graduate School Of Business at Bindura University of Science Education.

The student is the final stage of study which requires him to carry out a research. His dissertation is titled ***A working model for leveraging Microfinance to support the sustainability of small-scale miners in Mukaradzi, Mt Darwin, Zimbabwe***

We would be grateful if you could give him any assistance he may require.

For more details, please do not hesitate to contact us.

Yours faithfully,

Mwenje

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