CONTRIBUTION OF MINING ON LOCAL ECONOMIC DEVELOPMENT AMONG THE COMMUNITY MEMBERS

CASE STUDY: RUPA SUB-COUNTY, MOROTO DISTRICT

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NAPEYOK Esther
2013-M093-10008

Supervisor: Aliowaku Isaac

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Master's Dissertation

Approval

This dissertation has been produced under my/our supervision and submitted for examination with my/our approval as the appointed academic supervisor/s.

Name of Supervisor (1): AHIONAKU ISAAC

Signature of Supervisor: AA

Name of Supervisor (2): N/A

Signature of Supervisor: N/A

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DEDICATION

I, Esther Napeyok, take this opportunity to dedicate this dissertation to my parents and family for their continuous encouragement and sacrifices made during the entire of my studies, including my sisters and brothers who inspired me through their prayers. All the above family members deserve credit for their contribution to my academic success.

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GDP: Gross Domestic Product

FDI: Foreign Direct Investment

GM: Gold mining

CVI: Content Validity Index

SPSS: Statistical Package for Social Sciences

ABSTRACT

The study investigated the contribution of mining to local economic development among community members in Rupa Sub-county, Moroto District. In the research, mining was treated as the independent variable, while local economic development was considered the dependent variable. The study adopted a convergent parallel research design, incorporating both quantitative and qualitative approaches to ensure triangulation and enhance the credibility and validity of the findings.

The research was conducted specifically in Rupa Sub-county, located in Moroto District a region known for its mineral wealth, particularly artisanal and small-scale mining activities. Data collection involved a sample of 92 respondents, selected through a combination of stratified random sampling, simple random sampling, and purposive sampling techniques. These methods were used to ensure representation across different community segments, including miners, local leaders, youth, and women. Primary data was gathered using structured questionnaires and interview guides, designed to assess the extent to which mining contributes to local economic development. Key indicators considered under local economic development included income generation, employment opportunities, infrastructure development, and community welfare.

The study's findings revealed that mining contributes only 7.4% to local economic development in Rupa Sub-county. This figure falls significantly below the expected benchmark of 15%, highlighting a relatively low impact of mining activities on improving the economic wellbeing of local communities. This limited contribution is attributed to factors such as the dominance of informal and artisanal mining, lack of value addition, weak institutional frameworks, and limited community participation in the mining value chain.

Data was analyzed using the Statistical Package for Social Sciences (SPSS), version 23. The study concluded with key recommendations, including the need for stronger regulation of the mining sector, capacity building for local miners, increased investment in infrastructure, and inclusive participation of community members in mining-related decision-making processes. additionally, the study suggested areas for further research, such as the environmental impacts of mining in Moroto District, the role of gender in mining activities, and comparative studies on mining's contribution to development across other Sub-counties.

CHAPTER ONE

INTRODUCTION

1.0 introduction

This chapter presents the foundational elements of the study, beginning with the background, which explores the topic from a global, continental (Africa), regional (East Africa), national (Uganda), and local (Moroto District/Rupa Sub-county) perspective. It sets the context for understanding the role of mining in shaping local economic development, particularly in rural and resource-rich areas like Rupa Sub-county. The chapter further outlines the statement of the problem, clearly defining the gap that the study seeks to address. It also states the purpose and objectives of the study, along with the corresponding research questions that guided the investigation. Additionally, the chapter defines the scope of the study, highlights the significance and justification, and presents the conceptual framework, which illustrates the relationship between the key variables. The chapter concludes with the operational definitions of key terms used throughout the study to ensure clarity and consistency.

The central focus of the study is to examine the contribution of mining to local economic development among community members in Rupa Sub-county, Moroto District. In this context, mining is conceptualized as the independent variable, while local economic development is treated as the dependent variable. The study seeks to understand how mining activities influence the economic livelihoods of local residents and whether these activities are translating into tangible development outcomes within the community.

1.1 Background of the study

Globally, mineral extraction has played a significant role in driving economic growth and supporting local development. In the world's rich continents, such as Europe, Asia, and parts of South America, mining activities have substantially contributed to national GDP and improved local livelihoods. According to McMahon and Moreira, (2014) in European countries like France, Italy, Germany, and Spain, mining contributes approximately 45.3% to local economic development. These countries have leveraged mining to strengthen infrastructure, promote sustainability, and improve the living standards of their populations.

In South America, mining accounts for 40.2% of the region's Gross Domestic Product (GDP), contributing significantly to health and environmental sustainability. Similarly, Chanda-Kapata, (2020) notes that Australia has achieved substantial socio-economic development due to mining, with a 39.2% contribution to its GDP. In parts of Asia, including Japan, China, and India, mining supports 41.3% of local economic development, promoting social welfare and employment.

North America has also benefited from mining. Pavolová*et al;* (2022) reported that countries such as Brazil and Uruguay have seen mining contribute 38.3%, with impacts ranging from economic development to the growth of careers such as sports and the provision of health insurance in low-income communities.

Mining in Africa and East Africa

In contrast, mining's contribution to economic and local development in Africa has been comparatively lower. Gary and Susana, (2014) observed that mineral mining in African countries like Nigeria, Uganda, Ghana, and South Africa contributes only 30.4% to local and continental development. Despite the widespread presence of mining activities, especially in low-income rural areas, improvements in social services like health, education, and infrastructure remain limited.

Tilton and Guzmán, (2016) highlighted that although Africa and Slovakia have vast mineral reserves especially non-metallic materials used in construction and energy these resources have not significantly transformed local economies. In Slovakia, 60.5% of registered mineral deposits are exclusive, with non-metallic raw materials accounting for 79.3% of these.

In West Africa, countries like Nigeria, Ghana, Senegal, Liberia, and Sierra Leone have relied on mineral extraction, which contributes 32.1% to regional economic development. However, the local economic impact remains at 10%, suggesting limited benefits for the grassroots communities. in East Africa, Kegomoditswe, (2018) noted that mining in Uganda, Rwanda, Comoros, South Sudan, Kenya, and Tanzania contributes about 24.4% to GDP. However, the extent to which this translates into tangible local development remains unclear.

Koitsiwe, (2018) similarly emphasized that Southern African countries such as Botswana, Namibia, Lesotho, and South Africa have leveraged mining for national growth. Yet, the local-level impact remains ambiguous. In Central Africa (Middle Africa), including Angola, Chad,

Equatorial Guinea, and the Central African Republic, mining contributes just 5% to local economic development. Most communities in this region remain impoverished, lacking access to quality education, health care, and clean environments.

Pascalina, (2020) acknowledged that while East African countries have gained economically from mining, local development has been marginal. In Uganda, Rwanda, Kenya, and Burundi, low-income communities are actively engaged in mining, but improvements in social welfare remain minimal. Tita and Aziakpono, (2017) argue that mining expansion has introduced public health risks due to exposure to physical, chemical, and biological hazards, especially among poor populations living near mines.

Uganda's Context

Uganda is richly endowed with mineral resources and holds a significant share in the global mineral market. Adoho and Doumbia, (2018) highlight that the mining sector plays a vital role in Uganda's GDP and is seen as a pathway to poverty alleviation and social development. The government has long hoped that responsible mining would uplift low-income communities and contribute to sustainable economic transformation.

Fauziah*et al;* (2018) emphasized Uganda's potential to take full control of its mineral industry, creating opportunities for industrialization, job creation, and local economic growth.

However, Gawel, (2020) and Amacker*et al;* (2022) caution that resource exploitation must be guided by sustainability principles, as unsustainable mining can damage both communities and ecosystems.

Worrall *et al;* (2009) further noted that mining has historically left negative legacies on social and environmental systems, raising doubts about its long-term benefits. In Uganda's Karamoja region, Weldegiorgis and Ali, (2016) revealed that mining has intensified land conflicts, especially in Rupa Sub-county, where the discovery of marble and gold has drawn both local and external actors. This influx has displaced local communities, particularly the Karamojong pastoralists, limiting their access to grazing and farming land.

The resulting structural scarcity where powerful actors dominate access to resources while excluding less powerful groups has exacerbated inequalities. Despite the growing interest in

mineral resources in Rupa Sub-county, questions remain about whether mining activities can truly foster inclusive local economic development or simply deepen existing social and environmental challenges.

1.2 Statement of the Problem

Despite various efforts by the Government of Uganda and the Ministry of Energy and Mineral Development to promote sustainable mining practices aimed at enhancing local economic development, Rupa Sub-county in Moroto District continues to experience low levels of socio-economic progress among its community members. Notably, the Ministry's report, (2019) highlights a decline in local economic development in the Karamoja region from 29.3% to 21.4% with Rupa Sub-county reportedly facing the most severe setbacks.

While mining activities in Rupa have attracted a significant increase in Foreign Direct Investment (FDI) from US$3 million in 2017 to over US$100 million in 2022, this financial growth has not translated into meaningful local economic benefits. Community members continue to face widespread poverty, limited access to quality healthcare and education, and poor infrastructure, all indicators of underdevelopment.

According to the District Report, (2018) issues such as corruption among local actors and private sector stakeholders have further undermined the potential gains from mining activities. Although Uganda's Mineral Policy aims to drive local-economic transformation through investment, value addition, and local participation, its implementation remains weak at the grassroots level. Benshaul-Tolonen*et al;* (2019) emphasize that the objectives of poverty reduction and improved community welfare have largely not been realized in areas like Rupa, where the policy's intended outcomes are not visible.

Additionally, Stewart *et al;* (2020) argue that non-governmental organizations (NGOs) operating in the mining sector have fallen short in aligning their interventions with the broader goal of poverty alleviation and community development. Despite the government's adoption of the Mineral Policy in 2001 intended to ensure that mineral wealth contributes to sustainable national and local development, the disconnect between mining growth and improved local livelihoods

persists. Therefore, this study seeks to examine the actual contribution of mineral mining to local economic development in Rupa Sub-county, Moroto District. Understanding this relationship is essential for informing policy adjustments, enhancing community benefits, and ensuring that mining serves as a driver for inclusive and sustainable development.

1.3 The Purpose of the study

The study established the contribution of Mining on local economic development among the community members in Rupa sub-county, Moroto District.

1.4 Specific objective of the study

i. To find out the local economic development indicators among the community members in Rupa Sub county Moroto district
ii. To analyze the community engagement options during the mining activities in Rupa sub county Moroto district
iii. To establish the relationship between Mining and local economic development among the community members in Rupa sub county Moroto district

1.5 Research Questions

I. What are the local economic development indicators associated with community members in Rupa Sub-county, Moroto District?
II. How does community engagement options help during mining activities in Rupa Sub-county, Moroto District?
III. What is the relationship between mining and local economic development among the community members in Rupa Sub-county, Moroto District?

1.6 Scope of the Study

A scope of a study clarified the extent to which the research area was explored in the work and specifies the parameters within the study operating. Basically, this means that you will have to define what the study is going to cover and what it is focusing on.

1.6.1 Content Scope

Gasevic, (2017) explained that Content scope of the study basically means all those things that covered in the research project. It provides a general overview of the subjects covered, and highlights significant individuals, organizations, represented in the collection. Therefore, the study focused on the contribution of Mineral Mining on local economic development among the community members in Rupa Sub-county, Moroto District. sustainable development in Rupa Sub-county has become a serious concern to the community in as far as health, education, clean environment and physical infrastructure and little has been done to find out why there is limited local development even when the government provided access Mineral Mining system.

1.6.2 Geographical Scope

Geographically, the study was conducted in Rupa Sub-county, Moroto District. Moroto district is found in North Eastern Uganda, Karamoja Sub-Region. It is bordered by Kenya from the East, Kotido district from the North, Napak district from the West, Nakapiripirit district from the South, and Amudat district from South East. Rupa Sub-county was mainly selected. The seven parishes of Rupa Sub-county such as Lobuneit, Rupa, Pupu, Nakiloro, Mogoth, Lorukumo and Nakadeli covering 2,102 square kilometers was included in the study.

1.6.3 Time Scope

The study is based on a period of eight years ranging from 2018 to 2025. This period is considered appropriate because from 2018/25 mining is a significant sector that can improve the welfare of the society but little has been done, leaving the entire community in dire state in Rupa Sub-county, Moroto District. For that reason, the researcher tries to identify the gaps left and the reason as to why these gaps are necessary to be established for the purpose of reinforcing local economic development in the community. This will help the community of Rupa Sub-county leaders to put clear and appropriate mechanisms in Mineral Mining in order to strengthen sustainable local economic development among the community members.

1.7 Significance of the Study

To date, not much research has been conducted on the contribution of mineral mining to local economic development among community members in Rupa Sub-county, Moroto District. This

study is therefore adding to the existing research in this area and is serving as a basis for future research, particularly in exploring the variables and their interrelationships. The findings are proving vital to policymakers. This is providing a potential reference point for policymakers while formulating or revising government policies related to mining and local development.

Furthermore, the study will enlighten relevant stakeholders particularly the government, local authorities, and community members on key areas that require intervention and improvement. It is also making practical recommendations on how to strengthen mining policies and mitigate the negative impacts of mining on local economic development in Rupa Sub-county, Moroto District.

1.8 Justification of the Study

Mineral mining in Uganda is one of the leading economic activities among low level income community members in many parts of the country today. This is seen as one of the economic activities that generate income and support the lives of disadvantaged group of people in terms of education; health and clean water in many parts of the world however; in the case of Uganda communities who are involved in Mining activities live below poverty index, lacking most of the basic needs but also under developed, such as Rupa Sub-county. Though the government of Uganda made laws to regulate the mining in the country through the formulation of the 2022 mining policy, most of these laws are not implemented to the expectations in the country thus, leading suffering in mines, exploitation, land grabbing, environmental degradation and under development within the communities involved in Mining activities. To date no weigh bridge has been put to even measure the amount of limestone and marbles that leave Karamoja in order to pay appropriate royalties to the affected communities.

Therefore, this study will seeks to establish the contribution of Mineral Mining on local economic development among the community members in Rupa Sub-county, Moroto District.

1.9 Conceptual framework

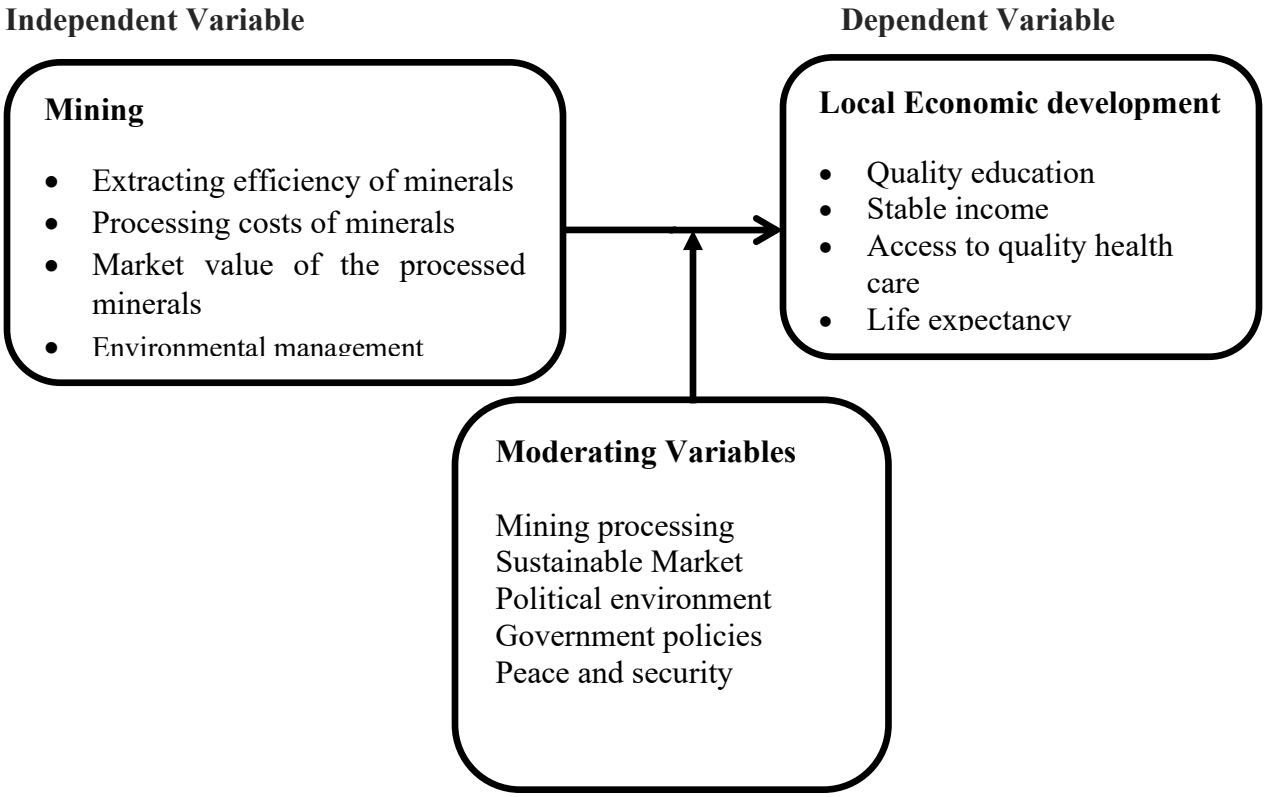
In this study, a conceptual framework was developed to show the relationship between the independent and dependent variables under investigation where the independent variable was

mining while dependent variable was (local economic development) among the community members in Rupa Sub-county.

In this framework mining is measured in terms of (Extracting efficiency of minerals, Processing costs of minerals, market value of the processed minerals and environmental management) while local economic development is measured in terms of (quality education, stable income, access to quality health care and life expectancy).

This conceptual framework will guide the study and the independent variable will be measured to establish their contribution toward local economic development among the community members in Rupa Sub-county.

Figure 1.1 Conceptual framework



Source: the conceptual framework is adopted from Australian National University**,** (2011), modified by Napeyok, (2023).Mining plays a key role in the increase local economic development among the community members in Rupa Sub-county. Therefore, the study attempted to establish the contribution of mineral mining on local economic development among

community members in Rupa Sub-county, Moroto District. In this study local economic development is the variable of interest in which the variance will try to explain (UNDP Uganda, 2021).

1.10 Operational definition of the concept

Mining is the extraction of valuable geological materials and minerals from the surface of the Earth. Mining is required to obtain most materials that cannot be grown through agricultural processes, or feasibly created artificially in a laboratory (UNDP Uganda, 2021).

Economics is a social science concerned with the production, distribution, and consumption of goods and services. It primarily analyzes the choices made by individuals, businesses, governments, and nations in allocating scarce resources to satisfy their needs and wants. The term development is widely used to describe a state of advancement or growth. It can also refer to the emergence of new and improved ideas, products, or events that mark a significant stage of progress under evolving circumstances (Oxford University Press, 2023).

Economic development refers to the programs, policies, and activities that aim to improve the economic well-being and quality of life within a community. The meaning of economic development can vary depending on the specific needs, challenges, and priorities of each community. Therefore, effective economic development planning must be inclusive and participatory, involving the people who live and work in the community to ensure that the strategies adopted reflect their realities and aspirations (International Economic Development Council, 2023).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the literature review related to the objectives of the study areas on the contribution of mineral mining on local economic development in Rupa Sub-county, Moroto District. Major gaps have been identified and the study tried to fill them with the answers to the research questions. This chapter is arranged in line with the available literature review surrounding marble quarries, gold and sand and gemstones mining which are specific objectives of the study in Rupa Sub-county. The chapter further points out the empirical studies conducted in the area of benefit sharing globally, regionally and locally. It lastly produced the study and brought out key argument that this study addressed.

2.1Mining

The mining sector in developing countries is growing rapidly and is the main recipient of foreign direct ventures. However, the welfare effects of this sector toward the disadvantaged communities is not well understood. The main contribution of mineral mining is to up lift the local economic development and transform rural areas into urbanization that promote sustainable welfare among the vulnerable communities in the world (Kevane, 2015).

Ghana is one of the African countries with a long tradition of gold mining and a recent, large expansion in capital-intensive and industrial scale production however, how to ensure that mineral resource wealth contributes to sustainable economic development has been a recurrent concern in many African countries (Bryceson and Fisher, 2014). It is an especially pressing issue in countries that are rich in resources, but perform poorly on a crowd of development issues. Many developing countries in the world today export resources, frequently through transnational firms, while the citizens enjoy little of the resource endowment. This occurs primarily due to prejudicial concern of mishandling the resource revenues of the country directed to the community for sustainable economic development (Dell, 2013).

According to Kotsadam and Tolonen, (2013) the high international Mineral price was a driving factor in the expansion of small-scale mining, two large-scale mines opened in Ghana, but no mine closed down due to the high mineral price increasing profitability and extending life length. The expansion across artisanal small-medium and large-scale mining contributed to an increase in total production that lifted many lives and enhanced from 541,147oz in 1990 to 3,119,823oz in 2009. This production increase led to an increased sector contribution to GDP from 483% (1990) to 578% in Ghana.

Ofosu-Mensah, (2010) argued that mining related foreign direct investment rose from US $165m to US$762m between 1995 and 2009. Mining was the dominating sector with between 48% and 94% of mining to total foreign direct investment until the country saw an incredible increase in non-mining foreign direct investment for sustainable economic development. Thorsen, (2012) elaborated that mining industry is connected to the wider economy via taxes and royalties. Developing countries such as Tanzania, Malawi Uganda and Ghana have been highlighted as a good example of how mineral-rich countries can distribute mining wealth, since a proportion of the rents are distributed to the local communities. The mining royalty paid by mining companies which was the average rate for mineral production in African Countries.

Contrarily, Dabalen, (2019a) affirmed that the performance of non-agricultural commodity exporting developing countries has not been impressive despite their valuable resource donations which turned into economic loses for sustainable development. The study conducted by Aragón et al; (2015) estimated that increases in commodity prices have a generally positive effect on growth and exports in the short-run that contribute less to the economic development. However, long-term effects differ depending on a country's governance measures. The long-run effect of commodity prices is positively significant for good governance countries while negatively significant for bad governance countries.

Benshaul-Tolonen, (2019) elaborated that mining has been the material of choice for monuments, temples and buildings for thousands of years. These days' local communities in developing countries have engaged in extracting marbles in order to earn a living (Bermudez-Lugo, 2012).

Bloch and Owusu, (2012) confirmed that Pakistan is rich in mineral resources, offering a great potential for economic development and prosperity among the community members. Generally speaking, marble industry has risen speedily as the manufacturing climbed yearly by an average of 7.3% and global business has enlarged by an average of 8.7%. Internationally, marble stone excavation for the moment is anticipated at 150 million tons gross annually which has improved the welfare of citizens in the country.

2.2 The local economic development indicators among the community members in Rupa Sub county Moroto district

To assess local economic development indicators among community members in Rupa Sub-County, Moroto District, you would typically consider a range of factors that reflect economic well-being and growth (Sudipta and Nutsolu, 2022).

Gawel, (2020) conformed that income Levels and Employment in Rupa sub-county has remained low much as the mining activities are highly performed in the region. Many families in Rupa sub-county live under poverty line. The average income levels of households in very low compared to the neighboring sub-counties. The economic well-being of the people in Rupa sub-county need immediate attention form the government and non-government organization. The proportion of the working-age population that is employed or engaged in economic activities is at 20.2% of the population in Rupa Sub-county.

Mbabazi et al; (2011) added that the number of crops produced per unit of land, which can indicate agricultural productivity is highly affected by the climate change in the region. The health and productivity of livestock, which are crucial for many in rural communities are not for every session.

Casell and Michaels, (2013) asserted that One of the major wastes generating industries is the mining and production industry by which around70% of this precious mineral resource is wasted in the mining, processing, and polishing procedures. Around40% of marble waste is generated world widely during quarrying operations in the form of rock fragments and being dumped either in nearby empty pits, roads, riverbeds, pasturelands, agricultural fields, or landfills leading to

wide spreading environmental pollution that affect the wellbeing of the people around the world today.

Fafchamps*et al*; (2016) opined that the recognition of growth marble has lifted various family out of poverty and contribute 0.008% in the country's GDP and ranked the 5th among all minerals. Although the mining sector currently contributes less than 1% to Pakistan's GDP, recent discoveries have provided strong evidence of significant mineral deposits and a great potential for the sector to contribute to the national and local economies sustainability.
World Bank, (2013) emphasized that in most developed countries, have got a large base of industrial minerals, and the growing interest from international mining companies carries great potential for the rapid local economic development sector. As the government is looking to enhance the contribution of the mining sector to sustain economic development and becomes even more imperative for the Policy to reflect developments in the global mining sector including legal, fiscal and environmental developments.

Tita and Aziakpono, (2017) argued that in order to achieve rapid development in the economy, many countries need to rely on various natural resource development activities such as quarrying, sand, and Gold mining for sustainability. Quarrying is a vital economic activity with the prospect to contribute to the development of areas endowed with these resources. The demand for building has tremendously boosted due to an increase in the growth rate of construction to meet the contemporary requirements of population increase and needs for development of housing, thus, encouraging quarrying among community members.

Gawel, (2020) argued that Quarrying and stone crushing has become a universal phenomenon and a cause for concern globally including in advanced countries. A form of land use engineering deals with the extraction of non-fuel and non-metallic minerals from rock is quarrying. This is done often in open pit mining with the use of rock drills, a blast of dynamite, and other methods.
Significantly, marble quarrying has a critical and complex issue. Although quarries provide raw materials to feed the needs of many societies, create employment opportunities, and bolster the local economy; they equally have huge impact on the environment and local communities (Oyinloye and Olofinyo, 2017).

This is evident in the negative impacts they have on the environment in different ways, from exploring and blasting to transportation and disposal of the waste rock. In addition, the declining environmental conditions are key contributors to ill health and low quality of life that impede sustainable development. Quarry dust is a major source of air pollution with some possible adverse health effects, especially those related to respiratory problems (Choi and Feinberg, (2021).

In addition, Adeniran *et al*; (2018) affirmed that explosives are used in blasting large rocks to help in excavating the area where granite is quarried. The blasting process creates vibrations that affect people in surrounding communities, eventually causing cracks or displacements to buildings located close to the quarry sites. The impact could be as severe as the shattering of glasses and other glassware in houses close to the quarry sites. The negative externalities of the phenomenal increase in population of Ibadan without a match for the physical space required to accommodate this growing population has remained a major challenge in the area.

Meanwhile, a lot of research has been carried out on issues relating to quarry activities. For instance, Bamgbose*et al*; (2014) reviewed the challenges of quarrying activities among rural residents in the Odeda Local Government Area of Ogun and found that the adjacent communities were impacted by the quarrying activities as they experienced a decline in crop yields due to dust cover, bloated leaf surfaces, property damage, constant shaking and consequential damage houses by rock blasting. Oyediran and Omoare, (2016) studied the impact of quarrying activities on the housing and water quality of rural households in mining areas of Oyo State and discovered that noise pollution from heavy machines and land shake from blasting affected the living environment. Thus, this study will establish the contribution marble quarrying on local economic development.

Ziminisky, (2018) argued the mining has been seen as the major economic activities to lift the Artisanal form poverty however, it was conveniently divided. When gold from West and East African countries were perceived to be the major source of bullion for the growing societies of the Mediterranean and Islamic world but when bullion exports from the New World, of

commercial interests and the Atlantic slave trade, appear to have discouraged creation of recorded knowledge of gold mining because all trade in gold became internal in developing countries.

Patel *et al;* (2016) confirmed that the shifts in supply from developing to developed countries arise mainly from new gold deposits in the various mines across the world. A major and fluctuating factor in demand for gold was the need for safe investment. This means that the demand for gold tend to increase when the real rate of return on alternative investments falls. Yet the local communities depended on that gold mining for economic development and sustainability. This usually occurs in periods when either the yield on benchmark securities falls significantly or when there are expectations of higher inflation.

Bebbington *et al*; (2016) asserted that gold transported via trans-Saharan trade was clearly essential in the monetization of the Mediterranean basin, and the development of the Arab and Berber dynasties in the Maghreb region. Despite the massive transportation of Gold from Africa to other parts of the world, it is evidenced that African countries are still struggling for sustainable economic development. They further estimated that productivity from both the Mali and Asante gold fields was about one gram of gold per day per worker. There are about 28 grams in a modicum, so a person might have extracted an ounce each month.

Rhee *et al*; (2018) argued that in order to have had a production level of approximately 30000 ounces (one ton), there would have been approximately 5000 people working as active miners. So if the household's averaged five persons and the wife and children supported the miners then about 25000 persons would have been involved in each of the major gold fields. This would have been quite high population density by medieval standards.

Contrarily, Sajjad and Naushad, (2019) argued that Military leaders, civilian administrators, and especially commercial interests of France and Britain were hopeful in their early assessments of how much gold in developing world. The British defeat was accompanied by significant prowling of gold wealth and demands for compensations by the victors in the form of gold that limited Commercial gold production. Yet it became clear even in the very beginning of the

colonial period that the security, relative to earlier decades, of colonial rule raised the opportunity cost of labor. Local farmers and migrant labor had better opportunities, and commercial mining enterprises were unprofitable.

2.3 The community engagement options during the mining activities

According to Hilson, (2016) community engagement during mining activities is crucial to ensuring that local populations benefit from mining projects and that potential negative impacts are mitigated. Effective community participation enables mining companies to gain and maintain a Social License to Operate (SLO) an informal approval granted by local communities. Engaged communities are more likely to support mining operations when their voices are heard and their concerns are addressed.

Several authors have explored the challenges and strategies surrounding mining and its relationship with local economic development. For instance, Benshaul-Tolonen*et al;* (2018) assert that although gold mining in African countries has the potential to support local economies, organizations overseeing these activities often reduce artisanal miners' benefits, resulting in lower income levels and limited contributions to local development. Similarly, Melodi, (2017) noted that while efforts to regulate and improve artisanal mining were initiated, many were later abandoned, leaving some organizations only nominally active in the sector.
Ogbonnaya and Phil-Eze, (2020) argued that sustainable economic development in many African communities remains elusive due to widespread corruption, which undermines local mining activities. They note challenges such as low gold ore quality, high labor costs, and difficulty in accessing spare parts, which reduce profitability.

Proactive community engagement, according to Maduka*et al;* (2018) can minimize conflict and opposition to mining activities. It facilitates feedback collection and grievance redress, fostering more harmonious relationships between companies and communities. However, mining policies in post-independence West and East African countries have often reflected poor policy choices, undermining development across multiple sectors. Rogan *et al;* (2016) also highlight that while governments have used gold revenues for political gain, they have largely failed to invest in

technological upgrades and institutional reforms resulting in declining productivity and profitability.

Sudipta and Nutsolu, (2022) explain that political instability and military coups in countries like Mali and Ghana have negatively affected their gold sectors. State-led efforts to revive mining operations have largely failed, hampering local economic growth. Similarly, Choi and Feinberg, (2021a) stress that community input is essential in improving the design and implementation of mining projects. Incorporating local knowledge enhances planning and minimizes negative social and environmental effects.

Following structural adjustment programs in many African countries, mining sector reforms were heavily influenced by the World Bank, which promoted liberalization. According to Ogundiran, (2018) new mining codes were adopted in several countries that favored mining corporations through low royalty rates (around 3%) and tax reliefs during initial production phases. Oyinloye and Olofinyo, (2017) point out that during the pre-modern era, gold extraction indirectly contributed to state formation not through direct revenue control but through broader economic differentiation and wealth distribution.

According to Adeniran *et al;* (2018a), monetization enabled long-distance trade, specialization, and investment in mining through credit systems. Ghana, for example, remains Africa's second-largest gold producer after South Africa, producing about 77 tons annually. In 2011, its mineral sector accounted for 14% of tax revenue and 5.5% of GDP, yet local economic development continues to face significant challenges.

However, Forhad*et al;* (2016) highlight growing public dissatisfaction with the way mining and quarrying are conducted across Africa. Numerous quarry disasters, abandoned sites, and poor safety practices especially in gemstone and sand mining are ongoing concerns. Many sites use explosives unsafely, lack protective gear for workers, and ignore environmental safeguards.

Choi and Feinberg, (2021b) elaborate that quarrying, like many extractive activities, causes significant environmental impacts, including noise pollution, air pollution, biodiversity loss, and habitat destruction. Similarly, Umar and Oriril, (2023) outline the stages of quarrying—from prospecting and exploration to actual excavation and emphasize the complexity and environmental consequences of each phase.

Post-mining restoration is critical. Sumarmi, (2021) asserts that ecological restoration of quarried land is essential to make it usable again. Reclamation efforts help mitigate long-term environmental damage caused by extractive activities.

Unfortunately, mining remains one of the most environmentally damaging human activities. Wahyuningtyas, (2021) notes that the health and social welfare of communities are often compromised due to pollution and land degradation. Elegbede et al; (2018) further reinforce this, pointing out that blasting techniques used in extraction contribute heavily to environmental damage.

Despite these challenges, Namutebi, (2017) argues that mining can contribute positively to local economic development when properly managed. However, she acknowledges that the extraction process including blasting, heavy machinery use, and mineral processing introduces high levels of noise and environmental disruption. Ultimately, the raw extraction of materials significantly affects natural ecosystems and the health and livelihoods of surrounding communities.

2.4 The relationship between Mining and local economic development among the community members in Rupa sub county Moroto district

According to Kutegeka et al; (2014a) the relationship between mining and local economic development is complex and multifaceted, with both potential positive and negative impacts. Mining projects can stimulate local economies by creating jobs related to mineral extraction, processing, and transportation. These employment opportunities often lead to stable incomes and improved livelihoods for surrounding communities.

Similarly, Kelloway and Francis, (2018) elaborated that mining can significantly contribute to local development by stimulating businesses and enhancing infrastructure. However, they also caution that mining activities can result in environmental degradation, economic dependency, and social disruption. Balancing these effects through effective management and strong community engagement is crucial for achieving sustainable development.

Kutegeka et al; (2014b) also noted that dust from mining sites is a major source of air pollution, with its severity depending on factors such as local microclimatic conditions, the concentration and size of dust particles, and their chemical composition. For instance, limestone quarries

release highly alkaline dust, while coal mines produce more acidic particles. This dust not only poses health risks particularly to individuals with respiratory conditions but can also damage local vegetation by blocking or abrading plant structures, which in turn affects agricultural productivity.

Michael, (2015) asserted that one of the most detrimental environmental impacts of quarrying is the loss of biodiversity. Biodiversity refers to the variety of living organisms including animals, plants, fungi, and microorganisms which are intricately interconnected. Disrupting this balance through mining can have far-reaching ecological consequences.

While sand mining contributes to economic development, it can also destroy habitats and the species they support. Even when habitats are not physically removed during excavation, they may be indirectly damaged due to changes in groundwater or surface water patterns, which can dry out or flood ecosystems. Noise pollution from mining operations can also interfere with wildlife behavior and reproduction. However, Chuhan-Pole and Land, (2015) argue that with proper planning and environmental management, it is possible to minimize these impacts. In fact, abandoned quarries may even be repurposed into conservation areas or restored natural habitats.

In contrast, Barreto et al; (2018) pointed out that many human activities, including quarrying, generate significant waste. While sand and gravel quarries produce minimal permanent waste, others such as clay or silt-based quarries generate substantial waste, leading to environmental risks such as water contamination. Dust from quarrying also settles on vegetation, land, and even water bodies used for domestic purposes, disrupting ecosystems and local livelihoods.

Branstrator, (2018) highlighted gender inequality in the mining sector, especially in India, where women often lack ownership rights over small mines and quarries. Their representation among mine workers varies by country and is influenced by factors such as mineral type, processing methods, market systems, social context, and availability of alternative jobs. Njugunah, (2017) added that the proportion of women working in mining-related activities including panning, processing, and transportation ranges from 10% to 50%. This increase is largely attributed to the growth of quarrying and the decline in traditional employment sectors such as agriculture and forest-based livelihoods.

Mihaye, (2013) emphasized that mining is often driven by economic pressures in developing countries, where it serves as a strategy to alleviate foreign debt and boost national revenue.

However, mining can also lead to the depletion of non-renewable natural resources and cause severe environmental damage, especially when sustainability is not prioritized.
Dabalen, (2019b) explained that the surge in income from local mining activities has enabled thousands of young people to become economically active, supporting sustainable development. Mining operations have shifted many from traditional village systems into more dynamic and sometimes more participatory social structures found within mining communities.
Chuhan-Pole et al; (2015) further argued that artisanal mining centers have evolved into complex social communities, often developing unique institutions independent of formal local governance. However, Aragón and Rud, (2015) caution that these social transformations do not always wait for generational shifts. Mining operations are often situated in under-serviced, remote regions, which complicates investment needs and social integration, especially in areas with significant Indigenous populations.

2.5 Local Economic Development

Aragón and Rud, (2013) showed that changes in mining activities have negative effects on nearby communities, raising environmental challenges compared to those located farther away, both before and after the opening or closure of a mine. Similarly, Asher and Novosad, (2018) found that the opening of mines causes women to shift from agriculture to the service sector in an effort to strengthen the local economy and promote sustainable development.

To foster local economic development, artisanal miners, local leaders, and the national government must collaborate across all revenue-generating sectors. In such contexts, women are more likely to engage in paid employment as the agricultural sector is increasingly abandoned. Women in mineral-rich communities tend to have access to more diversified labor markets, better healthcare, and are less likely to tolerate domestic violence, thereby contributing to the promotion of gender equality. Furthermore, infant mortality rates have decreased by up to 50% in mining communities, albeit from initially high levels.

Chanda-Kapata, (2020) explored the link between pollution from mining and agricultural productivity. The findings suggest that environmental pollution and soil degradation have led to declining agricultural output, adversely affecting households that do not participate in mining. This decrease in productivity may push such households toward mining-related sectors, not only due to reduced agricultural returns (push factors) but also due to the lure of higher wages in mining (pull factors), all contributing to a shift toward a mining-based local economy.

Flatø and Kotsadam, (2014) explained that the economic history of many developing countries has been significantly shaped by extensive and valuable mining activities, which have influenced both social and economic institutions. However, the historical and contemporary records of this influence remain inadequate due to limited time-series data on mining production across various gold-producing regions.

Moradi *et al;* (2019) elaborated that the value of gold extracted, in terms of purchasing power, population involvement, and the organization of production and trade, has declined due to a lack of clear and consistent support for artisanal miners aimed at improving their social welfare.

Ahmad and Khan, (2019) emphasized that mining has contributed approximately 36.5% to both local and national economic development in developed and developing countries. Countries with successful marble quarrying industries have achieved notable improvements in social welfare indicators such as education, healthcare, and environmental safety. Nevertheless, in Pakistan, most processing units use locally made, uncalibrated cutting machines, leading to high electricity costs and substandard production. Additionally, there is a lack of understanding and investment in maintenance and supply systems, further hindering local economic development.

Corno and de Walque, (2012) noted that mining activities have significantly contributed to local economic development in many Arab countries. Sandstone is commonly used for construction and development purposes, while onyx a partially translucent stone is often used in decorative industries. The availability of high-quality marble in large quantities and its demand in international markets have made this sector an important contributor to economic sustainability in various South Arabian countries.

Mamo *et al;* (2019) argued that local economic development in African countries has been influenced by the organizational structures and regulatory frameworks governing the mineral

mining sector. When industrial mining techniques were introduced by European entrepreneurs, gold mining became more profitable, especially under colonial administrators who organized and regulated the extraction processes.

Finally, Ofori and Ofori, (2019) observed that the current price of gold is near historically unprecedented levels. In fact, in real terms, the average price in 2011 was exceeded only by the price in 1980. Like other commodities, gold prices experience significant fluctuations. These fluctuations have impacted approximately 65% of artisanal miners, as prices are determined by global supply and demand, which in turn affects local economies and often contributes to developmental challenges within mining communities.

2.6 Moderating Variables (Mining Process, Sustainable Market and Political Interference)

According to Mbonigaba et al; (2024) provide a comprehensive analysis of mining's economic footprint in Africa using satellite imagery spanning from 1984 to 2019. Their study finds that mine openings significantly stimulate urban growth in nearby areas, especially in democratic countries. However, the developmental gains are more limited in authoritarian regimes and are frequently accompanied by increased risks of social conflict often tripling the likelihood of violence in those zones. Notably, these positive effects tend to be temporary, diminishing after mine closure, and thus raise questions about long-term developmental benefits.

Hercelin and Dörry, (2024) focused on mining in the Southern African Development Community (SADC), highlighting issues of unsustainable procurement practices. Key challenges identified include over-extraction, environmental degradation, poor waste management, and rising labor disputes. Their findings indicate a 10% drop in mineral reserves, a 20% increase in pollution incidents, and a 15% increase in labor grievances from 2020–2024. The authors recommend harmonizing mining regulations, offering tax incentives for sustainable practices, and institutionalizing mandatory reporting and community participation.

Franken and Schütte, (2022) explain that that mining expansion in the Global South especially in Africa, Latin America, and Asia often brings significant ecological and socio-economic disruption. The authors call for a transition towards responsible mining strategies that integrate environmental protection, social equity, and human rights into business operations.

Hercelin and Dörry (2024) explore Madagascar's mining reforms under the EU Green Deal. Using a pragmatic–axiological framework, they dissect how governments, civil society, and foreign investors assign value to mining revenues and justify surplus allocation. The authors argue that these value systems are inherently political and are often driven by investor-centered models such as the IMF's FARI (Financial, Administrative, and Institutional Resource Intensity) framework. They caution that such models can obscure accountability and are susceptible to elite capture and rent-seeking, particularly in states with weak institutions.

Müller, M., Carry, I., &Strack, L. M. (2022) highlights that global efforts can enhance governance in mineral supply chains. Instruments such as the U.S. Dodd-Frank Act, the OECD Due Diligence Guidelines, and forthcoming EU regulations have made strides in promoting responsible sourcing. However, the authors caution that enforcement remains inconsistent, especially in high-risk zones. A companion policy review by SWP–Berlin also emphasizes that while countries like South Africa and Chile have strong legal frameworks, enforcement mechanisms and community consultation practices often lag, particularly in more authoritarian settings like Zimbabwe.

Burgstaller et al; (2024) elaborated that recent regulatory developments such as the EU Critical Raw Materials Act (2024) aim to secure access to essential minerals through increased domestic extraction (targeting 10%), processing (40%), and recycling (25%) by 2030. The Act streamlines permitting timelines and supports international partnerships to reduce dependence on politically sensitive suppliers like China. Complementary to this, the Extractive Industries Transparency Initiative (EITI) has encouraged improved public oversight and attracted foreign direct investment up to 50% increases in participating countries like the DRC and Peru by enhancing public trust and transparency.

Political interference and instability continue to pose major challenges in mining sectors across Africa. Long, (2025) warned that frequent elections and surges in resource nationalism are increasing legal and regulatory volatility. These include abrupt contract renegotiations, shifts in tax policy, and outright export bans. Such instability has led to a rise in international arbitration

cases under mechanisms like ICSID. For example, in Mali, Barrick Gold filed an arbitration case after new laws forced companies to relinquish greater ownership to the state.

Greenberg et al; (2025) highlighted rising geopolitical tensions, particularly in West and Central Africa. Coups, contested elections, and nationalist rhetoric have led to unpredictable regulatory environments. In 2024, Mali detained foreign mining workers over disputed tax claims, highlighting how governments use coercive measures during fiscal disputes. These uncertainties reinforce the importance of legal safeguards, such as bilateral investment treaties and arbitration clauses in mining contracts.

In Mozambique's Cabo Delgado region, insurgent attacks by IS-affiliated militants have destabilized operations in sectors such as ruby mining and liquefied natural gas. Despite regional military interventions, tensions persist due to community marginalization and unequal resource sharing. Meanwhile, in Ghana, a 2022 study on illegal "galamsey" mining found that local elites including traditional chiefs and political actors often enable or benefit from these informal networks, further weakening formal governance structures and undermining environmental sustainability (Mkodzongi, 2025).

Asori et al; (2022) examines how regional cooperation can offset local political interference and enhance inclusive development. In Zimbabwe, efforts are underway to balance foreign investment with local beneficiation through legal reforms and regional initiatives such as the Zambia–DRC joint economic zone. This model, supported by the African Continental Free Trade Area (AfCFTA), aims to build resilient value chains and reduce dependence on raw mineral exports.

Conclusion

Between 2020 and 2024, scholarly and policy-oriented literature has deepened our understanding of the complex interplay between mining processes, sustainable development, and political interference. While some countries and regions have made significant strides in aligning mining with sustainability and transparency goals, widespread challenges remain.

Technological improvements and responsible sourcing frameworks offer pathways to reduce ecological harm, but governance gaps, political instability, and entrenched elite interests often undermine progress. As Africa and the Global South become increasingly central to global

mineral supply chains especially in the context of energy transitions building resilient institutions, ensuring fair value distribution, and fostering regional cooperation will be critical to achieving long-term sustainability in the mining sector

2.7 Previous Empirical Studies and Research Gaps Analysis

Over the past years, few studies have analyzed Mineral mining and local economic development the study done by koitsiwe, (2018) on the Impact of mining Sector on Economic development in Botswana, revealed that mining sector is a positive contributor on economic development. In his findings, indicated that Mineral mining is a significant indicator when one wants to lift economic development in any country around the world.

On the other hand, Clements and Johnson, (2000) investigated on minerals industry and employment in Western Australia. The results revealed that minerals industry is a positive on employment that increases sustainable economy in the society, though it affects the environment. The study done by United Nations economic commission for Africa and African Union, (2011) on Minerals and Africa's development, indicates that Africa's mineral is a significant contributor to rapid development and sustainable economy however, corruption and poor government leadership has always frustrated the Millennium development goals. These results further show that Curbing Corruption is not statistically significant in promoting local economic development, rather fighting against dictatorship among leaders and over stay in power would help Africa reach a certain level of economic development.

Contrarily, the study conducted by Natia Adam *et al*; (2022) on the dilemma of women empowerment in informal artisanal and small-scale gold ore mining in Ghana, revealed that most artisanals who are involved in extracting gold live a miserable life in Ghana, women are massively involved in mining activities but are the most affected group in terms of health, environment and sustainable economic development. Meanwhile, a study conducted by Van de Camp, (2016) on artisanal gold mining in Kejetia shows that gold mining is an insignificant determinant on lifting local economic development. He further said that much as local communities have engaged in mineral mining, the government and Non-Government

Organizations have failed to play their role in supporting communities out of poverty most especially in developing countries.

To conclude, the literature reviewed (koitsiwe, (2018); Clements and Johnson, (2000); United Nations economic commission for Africa and African Union, (2011); Natia Adam *et al*; (2022) and Van de Camp, (2016) indicated that several related studies have been done on Mineral Mining and economic development, however, none had analyzed the contribution of mineral mining on local economic development in Rupa sub-county, Moroto District, thus the present study is more relevant.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter gave an explanation of different sub-sections that were used in the methodology of the study.

The researcher adopted different sections in order to accomplish the study, such as research design, area of study, study population, the sample size, sampling techniques and data collection methods, data collection instruments, data quality control (validity and reliability), procedure of data collection, data analysis, measurement of variables, ethical considerations and limitations.

3.1 Research Design

Creswell (2017) explains that a research design comprises three main approaches: qualitative, quantitative, and mixed methods. A research design not only identifies the overall strategy of inquiry but also ensures that the research problem is addressed effectively through appropriate data collection and analysis methods. In line with this, Boru (2018) emphasizes that a research design outlines the procedures for acquiring the necessary data, the techniques for collecting and analyzing it, and how these steps contribute to answering the research questions.

For this study, a convergent parallel research design was adopted, integrating both quantitative and qualitative approaches independently to enhance the credibility and depth of the findings through triangulation. According to Zangirolami-Raimundo et al. (2018), a convergent parallel design involves collecting data separately though concurrently and analyzing independently in time to provide a logical description of the characteristics, events, or populations under study. It is also considered cost-effective and less time-consuming compared to other designs, making it suitable for this research.

The quantitative approach in this study focused on the use of numerical data collected through structured, close-ended questionnaires. This allowed the researcher to measure variables statistically and identify patterns or trends related to the contribution of mining to local economic development. Conversely, the qualitative approach involved gathering non-numerical data

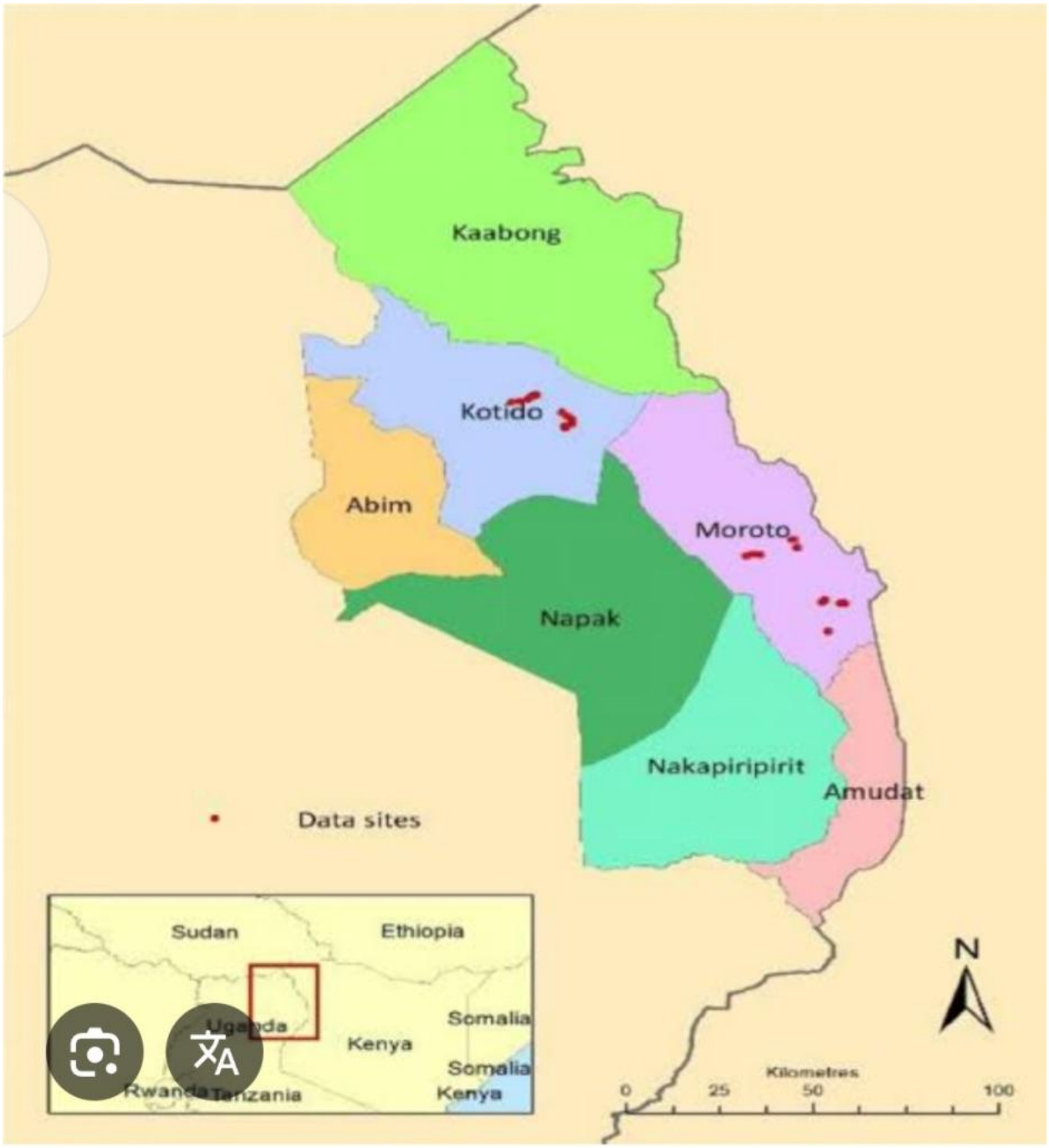
through open-ended, face-to-face interviews, enabling a deeper exploration of respondents' perspectives, attitudes, and experiences.

Israel (2016) supports the use of mixed methods, stating that combining quantitative and qualitative approaches improves the understanding of complex research problems by integrating diverse types of data. In this study, the mixed methods approach was justified as it provided a comprehensive view of the relationship between the independent variable (mining) and the dependent variable (local economic development).

Therefore, the convergent parallel design, complemented by both quantitative and qualitative methods, was deemed appropriate for this study. It allowed the researcher to meet the conditions of a mixed methods approach while ensuring that conclusions were drawn based on real, reliable, and multidimensional data analyses.

3.2 Area of Study

The research was conducted in Rupa sub-county, Moroto district. Geographically, Rupa Sub-county is located in Moroto District. bordered by Kaabong District to the north, Kenya to the east, Amudat District to the south, Nakapiripirit District to the southwest, Napak District to the west, and Kotido District to the northwest. Rupa Sub-county was chosen because it is one of the most areas in Moroto which practice Mining activities with limited sustainable development in Moroto district where community members are living below poverty line.


Kaabong
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Moroto
Napak
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Ethiopia
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25
50
100

Study Population

The population of Rupa Sub-county is 15,292 people residing in 3,782 households, according to the 2024 National population and housing census, The target population of the study was a total of 120 broken down to the following categories, artisanal (30), Community Members (50), Sub-county counsellors (10), Ministry of energy (5), Ministry of gender and labor (3), local leaders (10) RUCODET Staff (10), and Community development officer (2) in Rupa sub-county as primary respondents. It employed diverse section of people in order to verify a variety of views about the study.

This target population has been chosen because the researcher supposed that they have relevant information concerning mining and local economic development among the community members in Rupa Sub-county.

3.4 Sample Size

The sample size of 92 respondents was selected from a target population of 120 respondents. This sample size was determined using Krejcie and Morgan's Table (1970). In this table when the researcher gets (120) respondents, it provides a simple size of (92) respondents. It is usually impossible to survey every member of a large population that is why the researcher preferred to use this table in order to establish clear sample size.

To establish the exact simple size of the study, the investigator established the purposive respondents and subtracted them from both the target population and sample size of the study. It is established that the purposive sampling was (10) respondents. The researcher picked (120-10 which equaledto (110) then picked (92-10 which equaled to 82).

After that the researcher usedthe formula of (n = n ÷ N×p). In this formula, Capital (N) is regarded as (110) and Small (n) is regarded as the sub-target population which is (50St, 30St, 10St, 10St, and 10St) of the study then (p) is considered the sample size which is (82). The investigator further picked n = 50÷110×82 = 37, then 30÷110×82 = 22 and 10÷110×82 = 8.After that, the researcher justified the sample size of the study by adding all the calculation plus the purposive sampling of (10) in orderto get 92 as the sample size of the study. This will be by picking (37+22+8+7+8+10 which equaled to a sample size of 92 respondents. The above

calculations determined how the sample size was established using Krejcie and Morgan's Table (1970) for each group in Rupa Sub-county, Moroto District.

Table: 3.1 population Simple size

Categories of Respondents	**Target (P)**	**Sample size**	**Sampling techniques**
Community Members	50	37	Stratified random sampling
Artisanal	30	22	Stratified random sampling
Sub-county counsellors	10	8	Stratified random sampling
Local leaders	10	7	Stratified random sampling
RUCODET Organization	10	8	Stratified random sampling
Ministry of Energy	5	5	Purposive sampling
Ministry of gender and labor	3	3	Purposive sampling
Community develop Officers	2	2	Purposive sampling
Total Respondents	**120**	**92**	***Field data, 2024***

Source: *Moroto District*, *Rupa Sub-county report, (2019)*

3.5 Sampling Techniques

According to Mohamed, (2023) sampling technique is a method that represents how the researcher is going to collect data from respective respondents. In this study, the researcher used three sampling techniques in order to collect all the required information from respondents. This included stratified, simple random and purposive sampling.

3.5.1 Stratified Sampling Technique

Fakhri, (2023) explained that stratified sampling is a type of sampling method in which the total population is divided into smaller groups or strata to complete the sampling process. Stratified random sampling is suitable if the population is heterogeneous. In this method, the entire population was divided into a number of uniform groups, usually known as Strata, each of these groups is homogeneous within itself, and then units were sampled at random from each of these stratums.

After stratification, sampling was conducted separately in each stratum. In terms of stratified various respondents such as artisanal, community members, local leaders, Sub-county counsellors, and Non-government organization such as RUCODET Staff who formed the strata from which the sample was drawn basing on proportionate simple random sampling method.

3.5.2 Simple Random Sampling

Thomas, (2022a) explained that a simple random sample is a randomly selected subset of a population. In this sampling method, each member of the population has an exactly equal chance of being selected. It is used to make statistical inferences about the population. The researcher minimized the sampling error, and in this case, the researcher admitted that it is normal to make mistakes during sample selection and reduced the sampling error by choosing sample as representative of the population as possible.

The researcher randomly selected respondents in Rupa Sub-county who participated in the study during data collection, because it was very difficult for the researcher to use the whole target population for data collection. Simple random sampling helped the researcher to eliminate bias in the study, since it gave respondents equal chances of being chosen. In order to analyze the survey data, descriptive and inferential statistical methods were applied to assess the contribution of Mining on local economic development among Community Members in Rupa Sub-county, Moroto District.

3.5.3 Purposive Sampling

Purposive sampling is a form of non-probability sampling in which researchers rely on their own judgment when choosing members of the population to participate in their surveys (Tegan and Merkus, 2022a). Therefore, in this study purposive sampling was done on one on one interaction, which generated relevant information to support the quantitative results. The purposive sampling involved Ministry of Energy, Ministry of gender and labor, and Community development officers to help the researcher generate relevant knowledge and experience in the phenomena under investigation in Rupa sub-county, Moroto District.

3.6 Data collection Methods and Tools

Data collection method is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, this involves the use of quantitative, qualitative and mixed methods while the term "data collection tools" refers to the devices used to gather data, such as questionnaire, an interview guide, document review focus group discussion (Tegan and Merkus, 2022b).

3.6.1 Data Collection Methods

Ching-Yu Huang, (2019) explained that data collection method is the process of assembling and measuring information on targeted variables in an established systematic style which enables one to answer relevant questions and evaluate outcomes using either quantitative, qualitative or mixed methods. Therefore, this study involved a mixed research where both quantitative and qualitative were used to establish the contribution of mining on local economic development among the community members in Rupa Sub-county, Moroto District.

3.6.1.1 Survey

Survey research is a quantitative method in which a researcher poses a set of predetermined questions to an entire group of individuals. It is a useful approach when a researcher aims to describe features of a very large group of people (Mazaki, 2017a). Generally, a formal list of questionnaires was prepared which was circulated to the respondents and they can self-report their thoughts. The data which was collected from surveys was then statistically analyzed to draw meaningful research conclusions. No other research method can provide this broad capability, which ensures more accurate sample to meet targeted results in sketching conclusions and make significant decisions. For example, a questionnaire in particular, has a very small cost per respondent. Even if incentives are given to respondents, the cost per response is often far less than the cost of administering a phone survey and the number of potential responses can be in the thousands. For that reason, survey method was seen more relevant to this study in order to establish the contribution of mining on local economic development in Rupa sub-county, Moroto District.

3.6.1.2 Interviews

The researcher used the interview method for data collection in Rupa Sub-county. Mazaki (2017b), explained that an interview is a qualitative research method that relies on asking questions in order to collect data. Interviews always involve two or more people, one of whom is the interviewer asking the questions. Interviews allow researchers to gather qualitative data as well as gain insight into the thoughts and behaviors of individuals.

Interviews are often open-ended which allows for flexibility. They are effective method for data collection when the researcher wants to collect qualitative data in order to explore participant's thoughts, feelings and beliefs about a particular topic. Thus, the researcher used interviews method to get information from the selected respondents, who were Ministry of Energy (5), Ministry of gender and labor (3) and community development officers (2) in Rupa Sub-county. The purpose of selecting the above individuals was relatedly to their vast knowledge of Mineral mining and local economic development among the community Members in Rupa sub-county.

3.6.2 Data Collection Tools

Duggal, (2021) explained that a data collection tool is the process of gathering, measuring, and analyzing accurate data from a variety of relevant sources to find answers to research problems, answer questions, evaluate outcomes, and forecast trends and probabilities. The researcher therefore, used two data collection tools in order to be able to collect all the required information concerning mining and local economic development in Rupa sub-county. The main data collection tools were questionnaires and unstructured interview guide which enabled the researcher to have a successful data collation and produce accurate results that benefited the disadvantaged communities not only in Rupa Sub-county, Moroto district but also in other parts of the country.

3.6.2.1 Questionnaire

George (2022), explained that a structured questionnaire is the primary measuring instrument in survey research. The use of a structured questionnaire has a close relationship with quantitative analysis. Therefore, in this study, structured questionnaires were the main research instruments for data collection. The close ended questionnaires were preferred as an instrument of research because it is self-administered, that has identical set of items for all respondents, and produces

fewer errors, ensuring confidentiality as respondents will be free from the influence of the researcher. In the questionnaire, the researcher used a likert scale to rate the views of respondents on a level of agree or disagree. This study administered structured questionnaires using five likert scale format with 5 intervals: (1 = Strongly Disagree, 2 = Disagree 3 = Neutral, 4 = Agree and 5 = Strongly Agree) on 5 statement of each specific objective of the study. The respondents required, to indicate their level of agreement and disagreement by ticking at the appropriate option. The statements were formulated by assigning numerical value of (strongly disagree, disagree, neutral, agree and strongly agree) to respond categories of statements in the study.

3.6.2.2. Interview Guide

In this study, the researcher used a semi-structured interview guide for data collection in Rupa Sub-county. A semi-structured interviews guide is a mixture of structured and unstructured types of interviews. Semi-structured interviews are often open-ended which allows for flexibility. They are effective method for data collection when the researcher wants to collect qualitative data in order to explore participant's thoughts, feelings and beliefs about a particular topic. For that reason, the researcher used semi-structured interviews to get information from the selected respondents in Rupa sub-county. The researcher designed the semi-structured interviews to enable the participants explained more about the study.

3.7 Data Sources

This section describes sources of data. Goll*et al*; (2014), explained that primary sources of data include information collected and processed directly by the researcher, such as observations, surveys, interviews, while Secondary source of data include information retrieved through pre-existing sources: research articles, reports, Internet or library searches. Therefore, the researcher collected primary data and secondary data which helped to generate results concerning the contribution of mining on local economic development in Rupa sub-county.

3.7.1. Primary Data

Primary data was collected directly from respondents who participated in the research during data collection. The researcher used the Likert scale to rate the views of respondents on a level of agreement or disagreement. This was created as the simple sum of questionnaire responses over the set of individual items. The researcher administered structured questionnaires using five Likert scale formats on the statement of each specific objective and the dependent variable of the study.

3.7.2. Secondary Data

The Researcher used secondary data to support the empirical findings of the study. Secondary data may be sufficient to solve the problem, or at least help the researcher to better understand the problem under investigation. In any research secondary data is cheaper and quicker to collect than primary data and can be more accurate. The secondary data in this study included the existing related reports such as previous researcher's findings, published journals, articles, text books, newspapers, reports and individual publications and websites to support the argument of the findings in chapter four and builds up the conclusions, recommendations and suggestions for further study.

3.9 Measurement of Variables

According to Kigenyi, (2017) measurement is the method of assigning numbers to different degrees of explanation, views and mind-set about variables and the level of measurement as a function of the rules under which the numbers are assigned. For the questionnaire in this study, the variables under "mining and local economic development" was measured using a number of 5-point Likert scale format (1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree and 5 = Strongly Agree) to adopt and modify the study according to the specific objectives. The Likert scale technique was used to assign a scale value to the statements on chosen dimensions of mining which measured respondent's reality towards the given point of view. The opinions of the study were generated from the literature review.

The questionnaire was divided into sections basing on the constructs of mining and local economic development among the community members in Rupa Sub-county: First section (Part-A) presented respondent's demographic information, Second section (Part-B) evaluatedthe local economic development indicators among the community members in Rupa Sub county Moroto district, third section (Part-C) found out the community engagement options during the mining activities in Rupa sub county Moroto district. Forth section (Part-D) established the relationship between Mining and local economic development among the community members in Rupa sub county Moroto district. Lastly, fifth section (Part-E) established the status of local economic development among the community Members in Rupa Sub-county, Moroto District.

The study analyzed responses got from the questionnaire, using Likert scale format, means and standard deviation will be generated through the SPSS (version 23) using linear regression and an appropriate scale to interpret the means. Interpretation of results from the normal least square regression analysis was based on the standard regression (0.05). When, the standard is below, that means that mining is a significant and positive contributor on local economic development but when the standard is above, which meant that mining is not a significant determinant on local economic development in Rupa sub-county.

3.10 Data Quality Control

Before using the questionnaire in the actual data collection process, criteria to assess its extensiveness and value were in place, in order to ensure its success. A poor instrument produces inaccurate information, easily resulting in faulty decision making (Cheryl, 2019). The researcher evaluated the reliability and validity of the questionnaires before using them for data collection. In the present study, the researcher used two important criteria, such as validity and reliability to evaluate research instruments. That is why both Reliability and validity were of vital qualities of research and always took into account for effective data quality control.

According to John *et al*; (2014) the pre-testing is measuring the questionnaire instrument that involved trying it out on a small number of persons having similar characteristics to those who are targeted group of the study. To achieve consistency of the questionnaires a directive study was conducted to pre-test the effectiveness of questionnaires as research instrument for the study.

This required the researcher to conduct a lead study in a different sub-population in order to achieve the reliability and validity of the study.

3.10.1 Validity of Instruments

Validity is concerned with accuracy of measurement. It refers to the extent to which the research actually investigates what the researcher seems to investigate (kimaite, (2016). Therefore, to ensure the validity of the research instrument the questionnaire was constructed basing on related research and literature. In addition, the questionnaires were examined by the research supervisor then taken to the field. The draft version of the questionnaire was modified to ensure that the instrument targets what it is set out to identify. Any inappropriate or vague statements and questions eliminated.

The study used content validity. Nikolopoulou, (2022) explained that Content validity is the degree to which the instrument fully measures the construct of interest. A measurement instrument has content validity to the extent that its items represent the content that it is designed to measure. To estimate the content validity of the questionnaire, the researcher clearly defined the conceptual framework by undertaking a thorough literature review and seeking expert opinion. The average Content Validity Index (CVI) formula was used to determine the content validity of items on an empirical measure.

This was applied using the formula shown below;

$$CVI = \frac{\text{Relevant items}}{\text{Total number of items}}$$

$$\text{Or } CVI = \frac{RV+R}{\text{Total}}$$

$$CVI = 24 \div 30$$

$$CVI = 0.8$$

Having established the result above; the 29 are the questionnaires returned from the 36 questionnaires given out by the researcher to establish the validity of instruments being used in the study. Mohajan, (2017) affirmed that validity is an indication of how sound your research is. More specifically, validity applies to both the design and the methods of your research. Validity

in data collection means that your findings truly represent the phenomenon you are claiming to measure, if instrument scores above 0.6 then, it is considered valid for the study.

3.10.2 Reliability

Reliability means the consistency or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects (Thomson, (2019b). A random approach was used by the researcher to estimate the internal consistency of the questionnaire. The findings from it, suggested whether the construct of the questionnaires was reliable and consistent. Cronbach's alpha was used to check reliability which measured the internal consistency of questionnaire.

Technically speaking, Cronbach's alpha is not a statistical test but it is a coefficient of reliability. Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items. The researcher used SPSS (Version 23) to determine the coefficient statistic of reliability.

Table 3.2: Shows Results from Reliability Test of the Questionnaire

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.826	.830	29

Source: *pre-testing result, 2023*

It is noticed from this formula that if the number of items are increased, it would increase the value of Cronbach's alpha. Additionally, if the average inter-item correlation is low, alpha measures low. As the average inter-item correlation increases, Cronbach's alpha increases as well. Therefore, Reliability coefficient 0.830 or higher considered acceptable in most social science research situations). Exceeding the level of 0.5 is was considered good for the research.

3.11 Data Analysis and Presentation

To ensure easy analysis in this study, questionnaires were coded according to each variable to ensure accuracy during analysis. Descriptive, Minimum, Maximum, Mean, standard deviation through regression analysis and inferential statistics was established. The analysis started with the computation of variable analysis, after computing variables the researcher analyzed data and checked the validity and reliability of scale. Correlation and regression analysis were used for all specific objectives respectively.

This analysis was conducted using the Statistical Package for Social Sciences (SPSS), (23.0 Version). The questionnaire data was analyzed using descriptive statistics, which included frequencies and percentages. Inferential statistics was used to establish regression method. This analysis determined the relationship that exists between dependent and independent variables while regression was used to describe the relationship and the contribution of mineral mining on local economic development in Rupa Sub-county. These descriptive statistics enabled the researcher to describe variables numerically. The results from the analysis were presented using tables to provide an accurate picture of the research findings.

The design of the questionnaire was one of the key elements for the researcher in the study, since it contributes to the success of the research. The present study provided well designed and structured questionnaire that was necessary to address research questions. Therefore, quantitative data from the questionnaires was subjected to statistical analysis using the Statistical Package for Social Sciences (SPSS, Version 23) to reduce data, summarize it and make the most important facts and relationships apparent for descriptive and inferential data analysis. Descriptive statistics analyzed the percentages and frequencies, while inferential statistics analyzed the correlations, and regressions of the study.

3.12 Data Collection Procedures

The researcher secured an introductory letter from School of Arts and Social Sciences, Department of Development studies, Uganda Martyrs University introduced to Rupa sub-county, Moroto district authorities seeking permission to carry out research in the community. The

researcher presented her credential to the authorities enlightening the motive of the study. This section described in detail how data was obtained and the timelines involved in data collection.

The researcher used questionnaires and interview guide as the means of data collection that required identification of respondents whose cooperation was necessitated to answer certain statements as outlined in the questionnaire by ticking the appropriate opinion.

3.13 Ethical Considerations

In this research, confidentiality was top key priority and this sustained at all cost. There was as well acknowledgement and giving credit where due deserve for works not belonging to the researcher. The researcher all through abide by all the ethical research considerations. Information provided by respondents posed no danger directly or indirectly and all participants participated on their free will. Informed consent wasused where the researcher availed the respondents with the topic of the study, it purpose and expected time of collecting feedback. The respondents had the will to accept to be part of the study or not.

3.14 Limitations and delimitation of the Study

This study faced a number of limitations in terms of its geography, mines are scattered in different far locations making movement abit hard, insecurity also played a major obstacle, this limited the movement of the researcher to certain location as armed bandits where attacking and shooting travelers.

There were some locations like Sunbelt that were prohibited to access, this would have given the researcher information on how much marble is processed vis a vie what royalties are remitted but also know how much benefits the artisanal miners.

There could be other internal dimensions that contribute to local economic development that were not all included in this study. The results of the study depended upon the co-operation, willingness and honesty of respondents in answering the questionnaires and the interview guide. As a way of addressing some of the limitations, the researcher ensured that movement was done early not in the late hours, the researcher also co-opted research assistants in order to manage the different mining sites in time.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS OF RESULTS

4.0 Introduction

This chapter focused on the presentation and analysis of data collected from the field during the research study. The chapter encompassed the response rate, demographic characteristics of respondent, and the status of local economic development and the three specific objectives of the study. The data presented in tables and graphs using frequencies, percentages, mean and regression. The researcher issued out 82 questionnaires to respondents however, 80 were retrieved from respondents in Rupa Sub-county. The researcher further gave out 10 interview guides to collect relevant data which supported the quantitative results of the study.

4.1 Response Rate

This table represents the response rate of respondents who participated in the study using questionnaires in Rupa sub-county during research data collection.

Table 4.1 Response Rate of the study

Categories of Respondents	**Sample size**	**Response rate**	**Response rate %**
Community Members	37	36	97.2%
Artisanal	22	21	95.4%
Sub-county counsellors	8	8	100%
Local leaders	7	7	100%
RUCADET Organization	8	8	100%
Total Respondents	**82**	**80**	**97.5%**

Source:*Field data, (2024)*

The study discovered that out of 82 questionnaires administered to the participants in Rupa Sub-County, 80 of them were retrieved by the researcher. According to Taherdoost, (2016) response rate is the number of cases agreeing to take part in the study. These cases are taken from original sample. In reality, most researchers never achieve a 100 percent response rate. Reasons for this might include refusal to respond, ineligibility to respond, inability to respond, or the respondent has been located but researchers are unable to make contact.

However, this study achieved a response rate of 97.5%% in Rupa sub-county, Moroto district. Hamed, (2016) emphasized that response rate in survey research refers to the number of people who answered the survey divided by the number of people in the sample usually expressed in form of a percentage. In this study the response rate was done by dividing the number of questionnaires retrieved and those which were given out by the researcher in Rupa Sub-county, Moroto district. The response rate was 97.5% of the questionnaires that were returned, which was enough to produce reliable findings. The response rate was viewed as an important indicator of survey quality because higher response rates assured more accurate survey results.

4.2 Demographic Characteristics

According to Chappelow, (2019) demographics characteristic is defined as statistical data about the characteristics of respondents, such as the age, gender and education of the people within the population. However, in this study, demographic studies were important since mining is not strongly believed to contribute positively in the local economic development among the community members in Rupa Sub-County. The researchers believed that the populations' demographics may have significant contribution on their opinions on how mining contributes to local economic development.

4.2.1 Sex of Respondents

This table represents the Sex of respondents in Rupa sub-county on the contribution of mining on local economic development.

Table 4.2 Sex of respondents

Sex of respondent	Frequency	Percent
Male	51	64%
Female	29	36%
Total	80	100%

Source: *Research Findings (2024)*

The findings of the study indicate that majority of respondents 64% were male whereas female participants were represented by 36% in mining activities. The sex distribution conformed to the study that majority of the community members who are directly involved mining activities are male dominated in Rupa Sub-county, Moroto district.

4.2.2 Age bracket of respondents

The graph shows the different levels of respondents basing on their age to which they are participating in mining activities for sustainable local economic development in Rupa Sub-county, Moroto District.

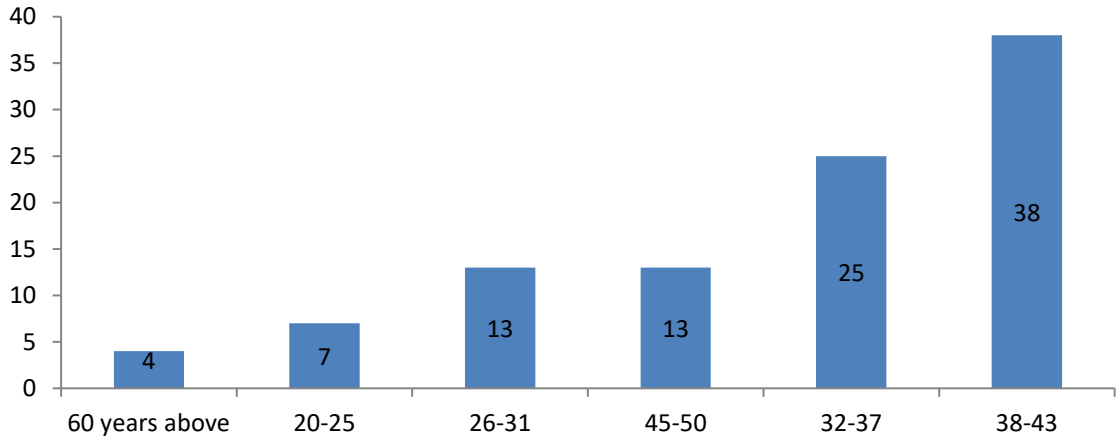

Figure 4.1 age of respondents

The study sought to establish the age of respondents in order to find out if age of respondents would contribute to respondents' perception on the contribution of mining activities on local economic development the graph above revealed that majority of respondent 38% of respondents were in the age bracket of 38-43 years where 4% of respondents were in the age bracket of 60 years above. This means that majority of respondents who participated in the study were youth in Rupa Sub-county, Moroto district.

4.2.3 Marital status of respondents

The table shows the level of the participant's marital status in Rupa Sub-county.

Table 4.3 Marital status of respondents

Marital status of respondents	Frequency	Percent
Married	41	51
Single	39	49
Total	80	100

Source: *Research Findings (2024)*

The finding revealed that among the community members in Rupa sub-county who are involved in mining activities, 51% are married with families and 49% of the participants are single who support their relatives through mining activities. This evidenced that community members in Rupa Sub-county engage themselves in mining activities in order to support their families.

4.2.4 Education of Respondents

The table represents the education level of respondents among the community members in Rupa Sub-county, Moroto District.

Table 4.4 education of respondents

Education of respondents	Frequency	Percent
Certificate	27	34
Diploma	15	19
None-educated	38	47
Total	80	100

Source: *Research Findings (2024)*

The results in Table 4.4 revealed that 47% of respondents participate in mining activities were not educated among the community members in Rupa sub-county. The findings further show that the certificate holders were represented by 34% and 19% were diploma holders in Rupa Sub-county. This means that majority of respondents are not educated, therefore it makes their work difficult since they are unable to negotiate for what they work for in the daily bases. Hence making hard for them to release local economic development in the society.

4.2.5 Religion of Respondents

This table represents the religion of respondent among the community members in Rupa Sub-county.

Table 4.5 Religion of respondents

Religion of respondents	Frequency	Percent
Muslim	13	16
Others	23	29
Catholic	44	55
Total	80	100

Source: *Research Findings (2024)*

The study sought to establish the religion of respondents in order to find out if religion of respondents contribute to the participation of mining activities toward sustainable local economic development in Rupa sub-county. The study showed that 55% of respondent were catholic whereas 16% of respondents were Muslims in Rupa sub-county, Moroto district.

4.2.6 The income of respondents

The table indicates the percentage to which community members who engaged in mining activities get in the daily bases in Rupa Sub-county.

Table 4.6 the income of respondents

Income of respondents	Frequency	Percent
15%	69	86
20%	5	6
30%	1	1
35%	3	4
40%	2	3
Total	80	100

Source: *Research Findings (2024)*

The findings of the study confirmed that among the community members who are engaged in mining activities receive only 15% in their income which is meant for daily income and insufficient to boost the local economic development in Rupa Sub-county, Moroto District. Those who are a bit educated receive only 20% to 40% once in year which contribute less to their income for sustainability.

Eatock, (2019) explained that a legend is a chunk of text that accompanies each figure in a laboratory report. Its purpose is to explain the figure clearly and thoroughly, providing readers with all the information necessary to understand the figures without returning to the main text of the report, therefore the researcher used descriptive legend to easy the understanding of the work.

Legend

Mean	Description
0-1-1	Very low level
1-1-2	Low level
2-1-3	Moderate level
3-1-4	High level
4-1-5	Very high level

4.3 The Status of local economic development in Rupa sub-county (objective one), Moroto District

This section illustrates the extent to which the dependent variable has affected the independent variable of the study.

Table 4.7 the Status of local economic development in Rupa Sub-county, Moroto District

No	Items	SD	D	N	A	SA	Mean	Std. D	Comments
1	Receive 35% income from mining activities	20	36	26	12	6	2.48	1.125	Low
2	Local economic development is low	1	6	8	69	16	3.93	.776	Moderate
3	We have limited access to education	2	8	18	67	5	2.65	.797	Low
4	The community has a stable income form mining	23	45	17	10	5	2.30	1.084	Low
5	The community access quality health care	15	24	33	19	10	2.85	1.192	Low
6	The life expectation in the society is unpredictable	6	0	6	75	13	3.94	.663	Moderate
	Overall	11	20	18	42	9	**3.19**	**.939**	**Moderate**

Source: *data analysis 2024*

To establish the status of local economic development in Rupa sub-county, Moroto district, six indicators were used and the results are detailed below (Table 4.7). When respondents were asked to give their opinions whether they receive 35% income from mining activities, 56% of

respondents agreed with the opinion whereas 18% of respondents disagreed with the opinion that the community members receive 35% income from mining activities. Those who were not certain with the opinion were represented by 26% of respondents in Rupa sub-county, Moroto district. The average mean (μ = 2.48, St. D = 1.125) indicates that the mining activities do not contribute 35% the local community income in Rupa sub-county.

Majority of respondents (85%) agreed with the opinion that Local economic development is low in Rupa sub-county whereas 8% of respondents were not certain whether Local economic development is low or not. Those who disagreed with the opinion were represented by 7% of respondents. The computed mean (μ = 3.93, St. D = .776) implies that Local economic development is moderate in Rupa sub-county, Moroto District.

Results from the study (Table 4.7) confirmed that (72%) of respondents agreed with the statement that the community have limited access to education despite being committed on mining activities whereas 10% of respondents disagreed with the opinion and only 18% of respondents were not sure about the opinion. The calculated mean (μ = 3.65, St. D = .797) indicates that the community in Rupa sub-county moderately have limited access to education. This implies that mining activities has no significant contribution on the local economic development.

Sixty eight percent of respondents disagreed with the view that the community has a stable income form mining. Those who were not certain with statement whether the community has a stable income form mining or not were represented by 17% and 15% of respondents agreed with the opinion that the community has a stable income form mining (Table 4.7). The average mean (μ = 2.30, St. D = 1.084) indicates that the community do not have a stable income form mining much as they involved on the daily basis in Rupa sub-county, Moroto district. This signifies that mining activities do not fully contribute to local economic development in Rupa sub-county.

When respondents were asked to give their views whether they access quality health care, 39% of respondents disagreed with the opinion (Table 4.7). Those who agreed with the opinion that the community access quality health care was represented by 29% of respondents and 33% of

respondents were not certain about the opinion. The average mean (μ = 2.85, St. D = 1.192) implies that the community do not access quality health care in Rupa sub-county and their environment has been affected by the mining activities leaving them in a miserable condition.

The findings in (Table 4.7) reveal that 88% of respondents agreed with the statement that the life expectancy in the society is unpredictable whereas 6% of respondents disagreed with the opinion and those who were not certain with opinion were represented by 6% of respondents in Rupa sub-county. The calculated mean (μ = 3.94, St. D = .663) indicates that the life expectancy in Rupa Sub-county is highly unpredictable in the society. The overall mean of (μ = 3.19 with St. Deviation =.939) indicates that the local economic development is highly wanting for any sustainable economic development to take place in the Rupa Sub-county, Moroto district.

To triangulate the questionnaires data which was administered to community members, artisanal, Sub-county counsellors, local leaders and RUCODET with the interviews guide which was conducted with Ministry of Energy, Ministry of gender and labor and Community development Officers in Rupa Sub-county, the responses were supportive with the quantitative findings in Table 4.7. When asked to explain the status of local economic development in Rupa sub-county, the interviewee Mrs. **W** remarked that;

> *''...indeed, the local economic development is very low, we who are working in the mining activities, we do not work to save development, we only work for our daily meal which even sometimes it become difficult to get it. The mining has lost the market and even the organization in charge is not doing the best to ensure proper payment. This has really affected the right to education among our children in Rupa sub-county…''.*
> (Interviews conducted in Lotongir in Rupa Sub-county local government on 24/07/2024).

This implies that in as much as the mining is booming, investors are collecting gains and the people are busy mining, there is little money that the artisanal miners get that cannot support investment to boost local economic development in the community

On the someday, the interviewee Mr. **H** narrate that;

> *"……the ministry of energy is imposing a lot of charges on us yet we get little from the mining activities which cannot even cater a meal for a full day. We expected the ministry of energy to come and try to help us instead they want get from us. On the last time we met they are telling us the register so that we can begin pay tax which is really unfair to the community…..''.* (Interviews conducted in Karukochom in Rupa sub-county local government on 24/07/2024).
>
> Mrs. **E** remarked that; *"the money that we get from extracting the minerals is less to support our families in terms of basic need; such as education, medication, shelter and save for development. We sell these minerals at a low price, sometimes we work tiresomely but at the end of it all you we cannot even raise money for food at home''.* (Interviews conducted in Karukochom in Rupa sub-county local government on 25/07/2024).

Basing on the fact that the local economic development in Rupa Sub-county is low to meet the community welfare in terms of education, health, good environment, one of the interviewees confirm that;

> Respondent Mr. **X** elaborated during interview that; *''families whose income come from mining activities live in miserable lives in the community. These mining activities are not reliable for economic development in our society. Most of us here shall soon leave this area because we do not have money to register with government. Besides that, the Gold these days has lost market it not like the way it used to be''* (Interviews conducted in Lotongir in Rupa Sub-county local government on 25/07/2024).
>
> Respondents Mr. **F** remarked that; *''...it is true the government requested them to register mineral mining most especially in the ministry of energy for proper control and monitoring, however the government is also willing to support with mining machines which will help them extract the gold and other minerals in a proper way that can attract the buyers in the country and outside the country…''* (Interviews conducted in Moroto District Ministry of energy's office on 25/07/2024).
>
> Interviewee Mr. N confirmed that *"I buy my children's scholastics materials from the money I receive after mining activities but it not enough to get all the required materials to take children at school. Yet we*

are working at risk by digging deep halls which sometimes kill us down there".

These results correspond with the study done by Gary and Susana, (2014) who confirmed that in Africa, Mining has contributed less on the economic and sustainable development locally and the entire continent by 30.4%, countries such as Nigeria, Uganda, Ghana, South Africa Mineral Mining has been the most daily activities on the low-income communities for survival however, social welfare has remained still wanting. Similarly, koitsiwe, (2018) elaborated that countries in Southern Africa, such as Botswana, Lesotho, Namibia and South Africa have greatly involved mining activities in order to raise their economic status from local to national level however, the extent to which this mining activities contribute to the local economic development is not clear. In the Middle Africa like Angola, Central African Republic, Equatorial Guinea, Chad have the lowest income communities whose livelihood depend on mining activities though mining in Middle or central Africa has contributed 5% of the local economic development, most communities are still experiencing or live below the poverty line which affects their access to education, health and environment.

`Furthermore, Weldegiorgis and Ali, (2016) add that in Uganda, private companies and individuals have flocked Karamoja to grab the enormous virgin land of warriors in search of gold and other minerals. Besides that, this wave has left many Karimojong without land for farming and grazing. Yet, based on historical accounts, the nomadic pastoral communities of Karamoja region have gone through a decade of intra-ethnic violent conflicts and it is now difficult to determine whether mining activities would transform the region or not. Therefore, the presence of marble in Rupa Sub-county has attracted many people to flock to Karamoja region in search of marble, Gold and other minerals in order to earn a living. In addition, structural scarcity occurs when a powerful group denies access to a resource by a less powerful one. This implies, the amount of the resource is still the same as before, yet the supply has not changed in real numbers. Though demand remains stable, scarcity of the resource is felt by the less powerful group.

4.4 The local economic development indicators among the community members in Rupa Sub-County Moroto district

The next table indicates the agreed and disagreed view of participant on the contribution of mining activities on local economic development. It gives the percentages and rate them according to scale.

Table 4.8 the local economic development indicators among the community members in Rupa Sub-County Moroto district

No	Items	SD	D	N	A	SA	Mean	Std. D	Comments
1	Community members receive 45% from mining activities	45	39	5	8	3	1.86	1.064	Very low
2	Commercial gold production is limited in the region	1	4	15	69	11	3.85	.713	Moderate
3	Financial decision making not favoring the society	4	3	14	71	8	3.79	.791	Moderate
4	local communities are advantaged in mining activities	35	39	15	11	0	2.03	.981	Low
5	Mining production has increased the economic income	29	35	20	13	3	2.28	1.125	Low
6	Mining activities boost the likelihood of financial stability	43	39	13	0	5	1.81	.858	Very low
	Overall	26	27	13	29	5	**2.60**	**.922**	**Low**

Source: *data analysis 2024*

This section presented the views of respondents about the local economic development indicators among the community members in Rupa sub-county and six indicators were used to determine the local economic indicators (Table 4.8).

When respondents were asked to give their views whether community members receive 45% from mining activities, 84% of respondents disagreed with the opinion. Those who agreed were

represented by 11% and only 5% of respondents were not certain whether community members receive 45% from mining activities or not. The calculated mean (μ = 1.86, St. Deviation = 1.064) elaborates that community members do not receive 45% from mining activities. This implies that the local economic development is not fully supported by the mining activities in Rupa sub-county.

Majority of respondents (80%) were in agreement with the opinion that commercial gold production is limited in the region, whereas 5% of respondents disagreed with the opinion. Those who were not certain about the opinion were represented by 15% of respondents (Table 4.8). The calculated mean (μ = 3.85, St. Deviation = .713) implies that Commercial gold production in Rupa sub-County is limited.

When respondents were asked to give their views whether financial decision making are not favoring the society, 79% of respondents were in agreement with the opinion (Table 4.8), whereas 7% of respondents were in disagreement and 14% of respondents were not certain whether Financial decision making are not favoring the society or not. The calculated mean (μ = 3.79, St. Deviation = .791) implies that financial decision making is not favoring the society of Rupa Sub-county, Moroto District.

Seventy four percent of respondents disagreed with the opinion that local communities are advantaged in mining activities, whereas 15% of respondents were not sure about the opinion, those who agreed with the view that local communities are advantaged in mining activities were represented by 11% (Table 4.8). The calculated mean (μ = 2.03, St. D = .981) indicates that local communities are not advantaged in mining activities in Rupa Sub-county.

Results of the study revealed that (64%) of respondents disagreed with the opinion that mining production has increased the economic income in the society whereas 16% of respondents agreed with the opinion (Table 4.8). Those who were not certain about the opinion were represented by 20% of respondents in Rupa Sub-county, Moroto district. The calculated mean (μ = 2.28, St. Deviation = 1.125) indicates that mining production has not increased the economic income in the community in Rupa Sub-county.

The findings of the study indicate that 82%) of respondents disagreed with the opinion that mining activities boost the likelihood of financial stability in Rupa Sub-county whereas 5% of respondents agreed with the opinion (Table 4.8). Those who were not certain about the opinion were represented by 13% of respondents in Rupa Sub-county. The calculated mean ($\mu = 1.81$, St. Deviation = .858) indicates that mining activities do not boost the likelihood of financial stability in Rupa sub-county.

The overall mean of ($\mu = 2.60$) implies that the local economic indicators are not significant indicators of sustainable development. The study further established that the local economic development indicators are not significant contributors on social welfare in the community. The study findings indicated that the interviews conducted by the researcher in Rupa Sub-county were in line with the quantitative analysis as shown in Table 4.8. When asked whether local economic development indicators among the community members play a significant role on the social welfare, some of their responses were:

> Mr. **Q** remarked that; *It is very hard to rely on something that does not contribute beyond expectations however, we have not choice because we are looking at mining activities as the only alternative which is not a guarantee that you will get the need full order to cater for your family. As you can see the low infrastructural development in the community.*
>
> (Interviews were conducted in Lotongir in Rupa Sub-county local government on 26/07/2024).
>
> Msr. **I** confessed that *"…it is true the local economic development in this community is very low, not because we are not working or we are lazy as many people imagine but it because we havea high illiteracy rate that we are trying to resolve to taking children to school…."*. (Interviews were conducted in Karukochom in Rupa Sub-county local government on 27/07/2024).
>
> Respondent Mrs. **Y** contradicts with the findings, she emphasized that "*mineral mining such as marble and gold have significantly contributed to our local economic development, the most important thing is that how do we use the little that we get from the mining activities to develop our*

community? Do we use them with a purpose or we use little resource around us for leisure?It is therefore high time for us to appreciate and learn how to manage the available resources in the community. - most of us in this community have moved away from grazing to mine the minerals and what does that imply? It simple implies that there is some money we gain after everything how the extent to which you manage it matters…"(Interviews were conducted in RUCODET in Rupa sub-county local government on 30/07/2024).

Table 4.9 Regression Model Summary of the local economic development indicators among the community members in Rupa Sub county Moroto district

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.008[a]	.000	-.013	.42595	.000	.005	1	78	.946
a. Predictors: (Constant), Led									

Source: *research findings, 2024*

These interview responses imply that not all responses from the interviewee were supportive with the findings Table 4.8 some of the participants were in agreement and other were in disagreement with the quantitative findings in Rupa Sub-county, Moroto district.

Regression analysis was undertaken to evaluate the local economic development indicators among the community members in Rupa Sub-county, Moroto district (Table 4.9). The results revealed that local economic development indicators are not significant contributors to social welfare for sustainable development. The findings further indicate that local economic development indicators correlate with community members by 0.8% which is not a strong indicator at p = 0.946 in Rupa Sub-county, Moroto District. This indicates that keeping other factors constant, local economic development indicators do not significantly contribute to social welfare in Rupa Sub-county.

The findings of the study are in agreement with the study done by Dell, (2013) who affirmed that local economic development is a pressing issue in developing countries that are rich in resources, but performing poorly on a crowd of development issues. Many developing countries in the world today export resources, frequently through transnational firms, while the citizens enjoy little of the resource endowment. This occurs primarily due to prejudicial concern of mishandling the available revenues of the country directed to the community for sustainable economic development. Similarly, Dabalen, (2019a) affirms that the performance of non-agricultural commodity exporting developing countries has not been impressive despite their valuable resource donations which turned into economic loses for sustainable development.

The study done by Rosham, (2023) elaborate that local economic development indicators have no significant influence on social welfare. Mining activities have always contributed greatly to sustainable development however the decline of marble and gold market has contributed to the failure of sustainable economic development especially in the developing countries. The study conducted by Aragón et al; (2015) estimated that increases in commodity prices have a generally positive effect on growth and exports in the short-run that contribute less to the economic development. However, long-term effects differ depending on a country's governance measures. The long-run effect of commodity prices is positively significant for good governance countries while negatively significant for bad governance countries. Contrarily, Fafchamps*et al*; (2016) confirmed that the recognition of growth marble has lifted various family out of poverty and contribute 0.008% in the country's GDP and ranked the 5^{th} among all minerals.

Although the mining sector currently contributes less than 1% to Pakistan's GDP, recent discoveries have provided strong evidence of significant mineral deposits and a great potential for the sector to contribute to the national and local economic sustainability.

4.5 To analyze the community engagement options during the mining activities in Rupa sub county Moroto district

This section presented respondents' view concerning community engagement in Rupa Sub-county before mining activities start. The table show the percentages of those who agreed and disagreed during data collection about the mining and local economic development.

Table 4.10 to analyze the community engagement options during the mining activities in Rupa sub county Moroto district

No	Items	SD	D	N	A	SA	Mean	Std. D	Comments
1	There is extracting efficiency of minerals in the region	44	30	11	10	5	2.03	1.190	Low
2	Most school on going children survive on mining activities	4	8	2	58	28	4.00	.981	High
3	The marketing value of the processed mineral is high	6	35	25	28	6	2.93	1.065	Low
4	The environment has been affected by the mining activities	7	20	38	25	10	3.10	1.074	Moderate
5	Most companies limit mining benefit to the society	6	6	33	41	14	3.50	1.019	Moderate
6	The community is taken through training before mining	64	23	8	0	5	1.55	.855	Very Low
	Overall	22	20	20	27	11	**2.85**	**1.031**	**Low**

Source: *research findings 2024*

Six opinions were selected in order to analyze the community engagement options during the mining activities in Rupa sub county Moroto district and the results revealed that the opinions of respondents towards the different indicators varied (Table 4.10).

However, the results revealed that majority of respondents (74%) were in disagreement with the opinion that there is extracting efficiency of minerals in the region whereas 15% of respondents agreed with the opinion and only 11% of respondents were not certain with the statement

whether there is extracting efficiency of minerals in the region or not. The calculated mean of (μ = 2.03, St. D = 1.190) implies that there is no extracting efficiency of minerals in the region.

Majority of respondents 86% agreed with the view that most school on going children survive on mining activities. Those who were not certain with the opinion were represented by 2% while 12% of respondents disagreed with the opinion that most school on going children do not survive on mining activities in Rupa Sub-county. The calculated mean (μ = 4.00, St. D = .981) reveals that most school on going children survive on mining activities in Rupa Sub-county, Moroto District.

When respondents were asked to give their opinion, whether the marketing value of the processed mineral is high (41%) of respondents disagreed with the opinion whereas 34% of respondents were in disagreement with the view and 25% of respondents were not sure whether the marketing value of the processed mineral is high or not (Table 4.10). The calculated mean (μ = 2.93, St. D = 1.065) implies that the marketing value of the processed mineral is low in Rupa Sub-county.

Thirty five percent of respondents agreed with the opinion that the environment has been affected by the mining activities whereas 27% of respondents were in disagreement with the view, and only 38% of respondents were not certain about the opinion. The calculated mean (μ = 3.10, St. D = 1.074) indicates that the environment in the community of Rupa Sub-county has been affected by the mining activities.

The findings revealed that (55%) of respondents agreed with view that most companies/investors limitmining benefit to the society and 33% of respondents were not sure whether most organizations limit mining benefits to the society or not. Those who disagreed were represented by 12% of respondents in Rupa Sub-county. The calculated mean (μ = 3.50, St. Deviation = 1.019) indicates that most companies/investors limit mining benefit to the society of Rupa Sub-county.

When respondents were asked to give their opinions whether the community is taken through training before mining (87%) of respondents disagreed with the opinion (Table 4.10). Those who agreed with the view were represented by 5% of respondents in Rupa sub-county and 8% of respondents were certain with the opinion. The calculated mean (μ = 1.55, St. Deviation = .855) emphasized that the community is not taken through training before mining in Rupa Sub-county, Moroto district.

The overall mean of (μ = 2.85) implies that the community is not engaged for any options during the mining activities in Rupa sub county Moroto district.

To triangulate these quantitative data with the interview guide results, the study revealed that Mr. **U** and Madam **V** responses were supportive with the quantitative findings in Table 4.10 during the interviews.

> Mr. **U** remarked that: *''...in our society, to be sincere our people are involved where there is hope of getting food. In the mining activities people are always there to work for the daily meals but even the money is got in vain which is not good. Community involvement in mining activities is very significant to raise up the local economic development but most benefits are not given to the community. No company, government or investor hasever come to orient us on the mining processes neither training us on how to mine the minerals and that is why we do it locally...''.* (Interviews conducted in Moroto district local government on 4/08/2024)

> Mr. **B**during the interview observed that *"the community is willing to work and get money but those responsible in giving this money are not faithful to us. Beside that the minerals no longer fetch high returns like they used to be before. The market value has gone down, also the companies and investors donot give to the community what is expected after mining..."* (Interviews conducted in Moroto district local government on 11/08/2024)

> Respondent Madam **V** remarked that; *"in our community Rupa Sub-county, women and children are the most vulnerable groups. We are the most unprivileged people. When I joined mining, I thought it will help me to pay my children's school fee but so far it has done nothing. The RUCODET which is our community trust does not help us to set prices for sale and loading of minerals but rather only deals on land transactions .We receive little than we expected. In most cases we get 10% of what we*

worked for which is really difficulty to achieve local savings for investment and development''. (Interviews conducted in Moroto district local government on 29/07/2024)

These interview results are in agreement with the findings in Table 410 which indicates that there is no community engagement options during the mining activities in Rupa sub county Moroto district.

Table 4.11 Regression Model Summary of the community engagement options during the mining activities in Rupa sub county Moroto district

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.038[a]	.001	-.011	.42565	.001	.115	1	78	.735
a. Predictors: (Constant), Ce									

Source: *data analysis 2024*

Regression analysis was undertaken to establish whether community engagement options were conducted during mining activities in Rupa Sub-county (Table 4.11). The results revealed that community engagement options are not significant determinants on local economic development during and after mining activities in Rupa Sub-county. The study revealed that community engagement options insignificantly correlates with local economic development by 3.4% in Rupa Sub-county at $p = 0.735$. This indicates that getting hold of other factors constant, community engagement options do not contribute to local economic development in Rupa Sub-county, Moroto district.

The research findings of the study disagreed with the study done by klein, (2024) argued that community engagement options are very good significant predictors that enable the community perform well in extracting the mineral. When you engage the community in various options it

enables them to make right decision what is more reliable to ease their work and protect the environment for sustainable development in the society. Similarly, a study done by Luca (2017) emphasized that community engagement options during mining activities show an increase in accountability for both the community and the companies for quality work.

Furthermore, Adeniran *et al*; (2018) affirm that explosives are used in blasting large rocks to help in excavating the area where granite is quarried. The blasting process creates vibrations that affect people in surrounding communities, eventually causing cracks or displacements to buildings located close to the quarry sites. The impact could be as severe as the shattering of glasses and other glassware in houses close to the quarry sites. The negative externalities of the phenomenal increase in population of Ibadan without a match for the physical space required to accommodate this growing population has remained a major challenge in the area.

In relation to the findings, Maduka*et al*; (2018) elaborate that mining policies in post-independence in developing countries more so in West and East Africa epitomize generally bad policy choices that undermine economic development across all sectors of local economies. Similarly, Rogan, et al; (2016) add that newly elected government authorities who have used gold revenues to secure political power also failed to invest in technology and organizational reform, which results into large unprofitable and production weakened dramatically.

4.6 To establish the relationship between Mining and local economic development among the community members in Rupa sub county Moroto district

To establish the relationship between Mining and local economic development among the community members, six indicators were used to measure the views of respondents among the community members in Rupa sub county, Moroto district.

Table 4.12 to establish the relationship between Mining and local economic development among the community members in Rupa Sub county Moroto district

No	Items	SD	D	N	A	SA	Mean	Std. D	Comments
1	Mining activities have promoted sustainable welfare in the society	48	36	6	7	3	1.81	1.020	Very low
2	Through extracting minerals many families are able to take children at school	10	0	78	0	12	3.03	.477	Moderate
3	High Mineral price increases profitability and extending life length in the community	1	4	18	61	16	3.88	.768	Moderate
4	Mining activities have good governance	49	35	13	0	3	1.71	.830	Very low
5	Community members receive their normal wages from mining	4	20	71	0	5	2.78	.595	Low
6	Mining laws and procedures are respected	35	31	33	0	1	2.01	.893	Low
	Overall	24	21	37	11	7	**2.54**	**.763**	**Low**

Source: *research findings 2024*

Majority of respondents (84%) disagreed with the opinion that mining activities have promoted sustainable welfare in the society whereas 6% of respondents were not certain about the opinion and 10% of respondents disagreed with the opinion that mining activities have promoted sustainable welfare in the society. The calculated mean ($\mu = 1.81$, St. Deviation = 1.020) implies that mining activities have not promoted sustainable welfare in the society of Rupa Sub-county, Moroto District.

Results of the study indicates that 78% of respondents were not certain whether through extracting minerals many families are able to take children to school and 12% of respondents agreed with the statement and only 10% of respondents disagreed with the opinion that through extracting minerals many families are able to take children to school in Rupa Sub-county. The computed mean ($\mu = 3.03$, St. Deviation = .477) implies that through extracting minerals many families are moderately able to take children to school.

Considering whether high Mineral prices increase profitability and extend life expectancy in the community, 77% of respondents agreed with the view whereas those who were not sure about the opinion were represented by 18% of respondents and 10% of respondents disagreed with the opinion that high Mineral price increases profitability and extending life length in the community (Table 4.12). The calculated mean (μ = 3.88, St. Deviation = .768) points out that moderately high mineral prices increase profitability and extend life expectancy in the community in Rupa Sub-county.

Eighty four percent of respondents were in disagreement with the opinion that mining activities have good governance whereas 3% of respondents agreed with the opinion. Those who were not sure about the opinion were represented by 13% of respondents (Table 4.12). The computed mean (μ = 1.71, St. Deviation = .830) implies the mining activities have poor governance in Rupa Sub-county.

When respondents were asked to give their opinions whether community members receive their normal wages from mining (71%) of respondents were not certain about the statement whereas 24% of respondents disagreed and 5% of respondents agreed with the opinion that community members receive their normal wages from mining. The calculated mean (μ = 2.78, St. Deviation = .595) indicates that community members do not receive their normal wages from mining in Rupa Sub-county, Moroto district.

Majority of respondents (66%) disagreed with the view that mining laws and procedures are respected and 33% of respondents were not certain with the opinion. Those who agreed with the opinion were represented by 1% of respondents (Table 4.12). The computed mean (μ = 2.01, St. Deviation = .893) implies that mining laws and procedures are not respected in the sites in Rupa Sub-county, Moroto district.

The overall mean of (μ = 2.54) implies that the relationship between mining and local economic development among the community members is low in Rupa Sub-county Moroto district. The result shows that the interviews conducted by the researcher in Rupa Sub-county were in line with the quantitative analysis as shown in Table 4.12.

The interviewee Mrs. **J** explained that;

> *''...it is true there is a relationship between mining and local economic development because in the actual sense any activity that gives money can lead to economic development as long as the returns are good, a good profit from mining can boost business in the community. Our economy in Rupa Sub-county is very poor, there are hardly shops to buy goods from instead the community members have to trek up to Moroto town to purchase goods.*

(Interviews conducted in Lotongir, Rupa sub-county on 26/07/2024)

> Respondents Mr. **B** remarked that; *''...RUCODET does not meet all the needs of the community because it depends only on money collected from the lease of land and this cannot be distributed to all households meaningfully. however, the government is also willing to support the community though on condition thatthey register so that they can be regarded as a full registered organization and start paying the taxes through the local government in the office Ministry of energy which in return will help them in the boosting their economic development''.* (Interviews conducted in Moroto district local government on 30/07/2024)

> Contrarily, during the interview, Mrs. **G**mentioned that *"....in our community the local economic development is on steady growth development in terms of business, our local community members are able to work from the mining sites and get money to open shops that in return it helps them acquire basic needs."* (Interviews conducted in Moroto district local government on 29/07/2024)
>
> Mr. **O*'s*** view was relatively connecting with Mrs. **G***'s* response. Mr. O remarked that "…. *In our community here to honest the we are growing in terms of improved access to health where the sub-county has got a health center II provided by the government through RUCODET which has really helped the community more so women hence reducing the maternal death rate while improving life expectancy…''.*
>
> (Interviews conducted in Moroto district local government on 30/07/2024)

The regression model summary disagreed with the interview result that the relationship between Mining and local economic development among the community members is significant in Rupa Sub-county.

Table 4.13 Regression Model Summary of the relationship between Mining and local economic development among the community members in Rupa Sub-county Moroto district

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.249[a]	.062	.050	.41256	.062	5.149	1	78	.026
a. Predictors: (Constant), Rb									

Source: *data analysis 2024*

To determine the relationship between mining and local economic development among the community members in Rupa Sub-county, a simple regression analysis was carried out (Table 4.13). The results revealed that the relationship between Mining and local economic development among the community members in Rupa sub county is at 24.9% at p = 0.26. This implies that the relationship between mining and local economic development is very strong for sustainable development in Rupa Sub-County, Moroto District.

The research findings of the study were not in line with the study done by Ogbonnaya and Phil-Eze, (2020) who explained that it is hard for the local communities in developing countries to have sustainable economic development because the entire continent of Africa is swallowed by corrupt leaders who think about themselves. This has affected the contribution of local mining activities on economic development hence limit sustainable development. Similarly, the study done by Forhad*et al*; (2016) disagreed with findings of the study, they further explain that there has been growing public dissatisfaction in the manner in which mining activities are undertaken in Africa. The continent of Africa has experienced various quarry disasters and complaints associated with quarrying activities especially with the abandoned quarries.

Most quarry sites are unsafe for operation and most quarry operators also fail to observe environmental and safety measures when carrying out Gemstones and sand mining activities. Most quarries use of explosives for blasting operations, this has made the sites weaker. Most the workers do not wear protective gear and as a result they are exposed to great danger.

Furthermore, Kutegeka*et al*; (2014) affirmed that dust from mining sites is a major source of air pollution, although the severity depends on factors like the local microclimate conditions, the concentration of dust particles in the ambient air, the size of the dust particles and their chemistry, for example limestone quarries produce highly alkaline dusts, whereas coal mines produce acidic dust. The air pollution is not only a nuisance in terms of deposition on surfaces and possible effects on health, in particular for those with respiratory problems but dust can also have physical effects on the surrounding plants, such as blocking and damaging their internal structures and abrasion of leaves and cuticles that affect agriculture.

Michael, (2015) asserted that one of the biggest negative impacts of quarrying on the environment is the damage to biodiversity. Biodiversity essentially refers to the range of living species, including fish, insects, invertebrates, reptiles, birds, mammals, plants, fungi and even micro-organisms. Biodiversity conservation is important as all species are interlinked, even if this is not immediately visible or even known, and the survival depends on the fine balance that exists within nature. Contrarily, Barreto *et al*; (2018) argued that man-made activities including quarrying involve significant amounts of waste but quarries do not produce large amounts of permanent waste, such as sand and gravel quarries, rather they reduce significant amounts of waste material such as clay and silt.

Table 4.14 the contribution of Mining on local economic development among the community members in Rupa Sub-county, Moroto District.

No	Items	SD	D	N	A	SA	Mean	Std. D	Comments
OB 1	To find out the local economic development indicators among the community members in Rupa Sub county Moroto district	26	27	13	29	5	2.60	.922	Low
OB 2	To analyze the community engagement options during the mining activities in Rupa sub county Moroto district	22	20	20	27	11	2.85	1.031	Low
OB 3	To establish the relationship between Mining and local economic development among the community members in Rupa sub county Moroto district	24	21	37	11	7	2.54	.763	Low
	Overall	**24**	**23**	**23**	**22**	**8**	**2.66**	**.905**	**Low**

Source: *research findings 2024*

The findings revealed that all the specific objectives of the study have a significant negative contribution on local economic development in Rupa sub-county, Moroto District. The objective one which is to find out the local economic development indicators among the community members shows that all the indicators of local economic development are significant to the community wellbeing in Rupa Sub-county. The second objective confirmed that the community engagement options during the mining activities are recognized so that they can influence their local economic development in Rupa Sub-county, Moroto district while the last objective of the study shows that there is no strong relationship between Mining and local economic development among the community members that can influence the welfare of the community in Rupa Sub-county in Moroto District. Therefore, the overall findings of the study affirm that

majority of respondents 47% disagreed with the opinion that mining contribute to local economic development in Rupa Sub-county while 30% of respondent agreed that there is a significant contribution of mining to local economic development in Rupa Sub-county, Moroto District. This was linked with the multiple regression summary of the findings which also revealed that mining doesn't contribute to local economic development in Rupa Sub-County at p = .116 insignificant.

In relation the summary above, the interviewee Mr. K disagreed with the findings.

> *He said that "...it is true as a community in Rupa sub-county we struggling of economic development, however there is little improvement compared to those other days. By then when you get some money form the mining sites as a man, you just branch to the drinking point by the time you leave to get home you nothing in the pocket but these at least we the men can spend on booze but still have some balances to buy food at home and also spend on school requirements. Meaning we have more money to spend than previously.*

However, Mr. A agreed with the result in table 4.14 and table 4.15.

> *Mr. A argued that though the mining activities are existing in our community today, it has not yet met the quarter of the intended goal especially in providing employment and higher wages to the surrounding community, the government and investors have not provided a clear employment or engagement policy or guidelines to the community of Rupa. The majority are employed as loaders and breakers at the mining sites with no employment terms Even the minerals which are got from there have lost value in the market which cannot boost investments and businesses. Women are giving bath on the floor because we cannot afford healthcare. Therefore, to be honest, the mining activities do not contribute to our local economic development in Rupa Sub-county, Moroto District".*

Table 4.15 Multiple Regression Model Summary on the contribution of Mining on Local economic development among the community members in Rupa Sub-county, Moroto District.

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.273[a]	.074	.038	.41519	.074	2.033	3	76	.116
a. Predictors: (Constant), Ce, Rb, Led									

Source: *data analysis 2024*

The results showed that the correlation between mining and local economic development was 27.3% at p = 0.116. This implies that the relationship of mining is insignificant determinant on local economic development. In terms of contribution, the results revealed that mining contributes to local economic development by 7.4% in Rupa Sub-county, Moroto District. This implies that holding other factors constant, mining is not a significant determinant on local economic development in Rupa Sub-county, Moroto District (Table 4.15). The study done Klein, (2024) confirmed that mining activities in developing countries has not achieve anything of related to local economic development because of continuous, conflict and natural disasters that affect the continent of Africa at large.

Furthermore, Chanda-Kapata, (2020) elaborate that the sustainable socio-economic development in Australia has been out of significant mining activities which contributed 39.2% domestic product. In Asia such as Japan, India, Chine, mining has greatly had a significant contribution on social welfare and increased local economic development by 41.3%. Pavolová *et al;* (2022) emphasize that in North-America, such as Brazil, Uruguay mineral mining has contributed to 38.3% on development of football carrier and elevated the low-income societies which has established health insurance in the entire cotenant.

Contrarily, Gary and Susana, (2014) confirm that in Africa, mining has contributed less to the economic and sustainable development locally and the entire continent by 30.4%, countries such as Nigeria, Uganda, Ghana, South Africa mineral mining has been the most daily activities on the low-income communities for survival however, social welfare has remained still wanting. The huge volumes of minerals in Slovakia and Africa are composed of non-metallic raw materials for construction and energy, which substantially cover their domestic production.

Tilton and Guzmán, (2016) argue that mineral deposits were registered in Slovakia, of which up to 60.5%, of 569 Mineral deposits, were exclusive and 39.5%, of 372 deposits, were of non-reserved minerals. The non-metallic raw materials showed the highest number of exclusive deposits, up to 79.3%, and 47.9% of the total 941 mineral deposits. The lowest abundance in exclusive deposits was in coal, whose deposits accounted for 3.7% and 2.2% of the registered 941 mineral deposits.

CHAPTER FIVE

SUMMARY, CONCLUSION ANDRECOMMENDATIONS

5.0 Introduction

This chapter presented the summary of the findings and conclusions, limitations, recommendations and suggestions of the study. The study was conducted to establish the contribution of Mining on local economic development among the community members in Rupa sub-county, Moroto District.

5.1 Summary of study

5.1.1. The local economic development indicators among the community members in Rupa Sub county Moroto district

The findings of the study revealed that local economic development indicators among the community members in Rupa Sub-county have no positive contribution to the community welfare and sustainable development. This implies that the identified local economic indicators are not significant contributors. For any sustainable development to be achieved in the community, proper strategies, community and stakeholder involvement, transparent governance and improved public-private partnership. These are required to be in place so as to improve on the welfare of the people but also to drive local economic development in Rupa sub-county, Moroto District.

5.1.2 The community engagement options during the mining activities in Rupa sub county Moroto district

In the vast majority of cases, Mining is seen as a significant contributor to economic development in any community. Though, there is an increasing lack of proper financial management to support the community members involved in mining activities. However, the findings of the study revealed that community members are not trained on how to handle minerals during and after the process from the mining sites. The results further show that community engagement options during the mining activities are not significant contributors to local economic development in Rupa sub-county. In Rupa Sub-county there is growing public

attention to the issue of lack of education among community members which has limited many Artisanal from receiving format training for extracting the minerals for economic development.

5.1.3. The relationship between Mining and local economic development among the community members in Rupa sub county Moroto district

The findings of the study indicate that mining and local economic development have a strong relationship. It is evidenced that the relationship between mining and local economic development among the community members in Rupa Sub-county is significant in promoting sustainable economic development. The study further emphasizes that if the mining is not taken seriously as a contributor of local economic development, the community of Rupa sub-county will still face massive economic challenges which will continue affecting the welfare of the community.

5.2 Conclusion

In conclusion, this research has provided a comprehensive analysis of mining activities that affect local economic development in Rupa Sub-county. The findings indicate that while advances in reclamation techniques have yielded notable improvements in soil health, significant challenges remain in mitigating sediment runoff and protecting water quality. Most areas in Karamoja region practicing mining activities are gifted with a diversity of mineral resource. The rents from these natural resources have the potential to contribute to both economic growth and development among the community members. However, this potential is not yet realized in many areas of mining and reproducing.

The research findings of the study indicate that mining is not a significant determinant on local economic development without formal education and trainings which can enable the artisanal to extract these minerals well for sustainable development. Corruption and loss of market value (as result of many brokers) of minerals such as gold, marbles and sand have played a significant role in reducing the contribution of mining activities on local economic development.

The findings of the analysis of the mining is consistent with the widely held belief that the industry's contribution to development is hindered both by its territory nature and the occurrence of unfair reductions agreements signed between governments, foreign mining companies and the

community. Ensuring that the governments of Uganda receive a larger share of the mineral is a necessary but not sufficient condition for the mining sector to contribute positively to local economic development in the region. Without good governance, the resource revenues are unlikely to be spent appropriately even if a higher share of the mineral somehow manages to accumulate to governments. The current price of gold is at an almost unprecedented low. In fact, the average price in 2023 is lower than only the price attained in 2011 in real terms hence contributing negatively to the profit gained by the community in Rupa Sub-county, Moroto District.

5.3 Recommendations from the Study

Since this study point out that there is no positive significant contribution of mining on local economic development in Rupa sub-county, this study recommends that;

i. There is need to establish community-specific indicators such as income levels, employment rates, access to education, health services, food security, and infrastructure quality.
ii. Implement annual or biannual socioeconomic surveys to track changes in livelihoods, asset ownership, and economic diversification.
iii. Equip local administrative offices with digital tools and training to collect and manage data on development indicators efficiently.
iv. Use development indicators to inform resource allocation and participatory budgeting at the sub-county level.
v. Require that all mining companies and artisanal operations conduct regular, documented consultations with affected communities, including women and youth.
vi. Form legally recognized bodies comprising community members, local leaders, and miners to oversee and coordinate mining activities.
vii. Conduct training sessions on mining laws, rights, and responsibilities of both companies and communities.
viii. Educate community members on how to negotiate fair compensation and environmental safeguards.
ix. Promote the participation of women, youth, and disabled persons in decision-making processes related to mining.

x. Implement tools like community scorecards, participatory monitoring, and grievance redress mechanisms to ensure transparency and feedback.

xi. Encourage investment in sectors such as agriculture, livestock, tourism, and small-scale manufacturing to reduce overdependence on mining.

xii. Advocate for a portion of mining royalties or fees to be reinvested directly into local infrastructure, education, and healthcare.

xiii. Work with the district and national governments to ensure that mining regulations are enforced, especially those relate to environmental protection, revenue sharing, and labor rights.

xiv. Promote collaboration between mining companies and local government to fund and implement community development projects.

xv. Encourage mining companies to adopt Corporate Social Responsibility (CSR) policies that align with local development goals.

5.4 Suggestions for Further Studies

The current research was based on the contribution of mining on local economic development among the community members in Rupa Sub-county, Moroto District however, the researcher suggested that more research can be conducted on the relationship between mining activities and local economic development in Nanyidk since the present study looked at Rupa sub-county.

A similar study recommended the effect of gold mining on environmental sustainability in Rupa Sub-county, Moroto District.

Further research could be conducted on the effect of low level of education on local economic development in Rupa sub-county.

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Appendix: I Questionnaire

Dear respondent,

I, Esther Napeyok a student at Uganda Martyrs University Nkozi conducting research on the topic of the contribution of Mining on local economic development among the community members in Rupa sub-county, Moroto District. The purpose of the study is to establish the contribution of Mining on local economic development among the community members in Rupa sub-county, Moroto District. You have been randomly selected and kindly requested to take part in this study by completing this questionnaire. Your participation is purely voluntary and you deserve the right to withdraw anytime without any problem.

The information obtained from you is confidential and will be protected as such to the extent permitted by law. Although, there are no benefits to you as an individual, you will have an opportunity to write about your experiences and offer valuable suggestions concerning the topic. As a participant, you will not acquire any financial costs and there are no risks attached for being a respondent. This research is for academic purposes only.

Please answer all questions as accurately as possible

Tick the answer where appropriate

SECTION A: Demographic Characteristics

Gender: Male ☐ Female ☐

Age: 20-25 ☐ 26-31 ☐ 32-37 ☐ 38-43 ☐ 44-50 ☐ 60 years above ☐

Marital Status: Married ☐ Single ☐

Level of education: Certificate ☐ Diploma ☐ Degree ☐ Masters ☐ Non-Educated ☐

Religion: Muslim ☐ Christian ☐ Catholic ☐

Income Standard from Mining: 15% ☐ 30% ☐ 35% ☐ 40% ☐

45% ☐ 50% ☐

Please tick using the likert scale in the boxes bellow

SD	D	N	A	SA
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

SECTION B: Objective (One)

No	Statements	SD	D	N	A	SA
1	Community members receive 45% from mining activities					
2	Commercial gold production is limited in the region					
3	Financial decision making arenot favoring the society					
4	local communities are advantaged in mining activities					
5	Mining production has increased the economic income					
6	Mining activities boost the likelihood of financial stability					

SECTION C: Objective (Two)

No	Statements	SD	D	N	A	SA
1	There is extracting efficiency of minerals in the region					
2	Most school on going children survive on mining activities					
3	The marketing value of the processed mineral is high					
4	The environment has been affected by the mining activities					
5	Most organizations limits mining benefit to the society					
6	The community is taken through training before mining					

SECTION D: Objective (Three)

No	Statements	SD	D	N	A	SA
1	Mining activities have promote sustainable welfare in the society					
2	Through extracting minerals many families are able to take children at school					
3	High Mineral price increases profitability and extending life length in the community					
4	Mining activities have good governance					
5	Community members receive their normal wages from mining					
6	Mining laws and procedures are respected					

SECTION F: Dependent Variable

No	Statements	SD	D	N	A	SA
1	We receive 35% income from mining activities					
2	Local economic development is low					
3	We have limited access to education					
4	The community has a stable income form mining					
5	The community access quality health care					
6	The life expectation in the society is unpredictable					

Thank you, for your participation

Appendix: II Interview guide

Dear respondent,

I, Esther Napeyok a student at Uganda Martyrs University Nkozi conducting research on the topic of the contribution of Mining on local economic development among the community members in Rupa sub-county, Moroto District. The purpose of the study is to establish the contribution of Mining on local economic development among the community members in Rupa sub-county, Moroto District. You have been randomly selected and kindly requested to take part in this study by completing this questionnaire. Your participation is purely voluntary and you deserve the right to withdraw anytime without any problem.

The information obtained from you is confidential and will be protected as such to the extent permitted by law. Although, there are no benefits to you as an individual, you will have an opportunity to write about your experiences and offer valuable suggestions concerning the topic. As a participant, you will not acquire any financial costs and there are no risks attached for being a respondent. This research is for academic purposes only.

Oral writing for purposive respondents

Why do you think your local economic development is low among the community members?

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What could be the indicators that you think they contributing negatively to your economic sustainability?

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What are the training procedures put in place for one to start mining activities in your community?

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What is the relationship between mining activities and local economic development in Rupa sub-county?

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What percentage of the mining activities contribute to your personal economic sustainability?

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How does RUCODET in-charge of mining help you in the financial need?

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Is the organization helping you conduct proper extracting activities?

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Does your traditional custom support mining activities for both gender?

If yes or No, explained

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How does marketing value affect the mineral processing in the community?

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What is the status of local economic development in Rupa sub-county?

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Is it true that organization in-charge does not comply with the agreement signed by the community and the government officials?

If yes or No, please explained how

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Does mining activities contribute to your financial support for quality education?

If yes or No explained why?

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Thank you, for your participation

APPENDIX III**: WORK PLAN**

Serial	Activity	Period (2024/2025)	Duration
1	Proposal writing	March-July	5 Months
	Questionnaire design	July	1 Week
	Pre-testing questionnaire	July	2 weeks
2	Administering of questionnaires	August	2 weeks
3	Organizing data	August	1 weeks
4	Data analysis	August	1weeks
5	Writing a report and submission	September	2 Weeks

APPENDIX V: BUDGET

Serial	Item	Quantity	Rate	Amount
1	Communication	10	20,000	200,000
2	Transport to Kampala for Face to face	3	200,000	600,000
3	Subscription of books	-	450,000	450,000
4	Reams of papers	5	20,000	100,000/=
5	Internet surfing	-	400,000	400,000
6	Proposal Writing	-	1,000,000	1,000,000
7	Photocopying, typing	-	600,000	600,000/=
8	Questionnaire administering	-	500,000	500,000/=
9	Data entry and analysis	-	400,000	400,000
10	Report Binding		310,000	310,000
	Total	-	-	**4,360,000/=**

Pictures of mining sites

An abandoned gold tunnel in Lotongir site in Rupa Sub-county, Moroto District.

Marble quarry site in Karukochom mining site in Rupa Sub-county, Moroto District.

Local artisanal mining sieving gold in Lotongir gold mining site in Rupa Sub-county, Moroto District