

**DETERMINANTS OF COMMUNITY DEVELOPMENT IN
EXTRACTIVE PROJECTS: A CASE OF MUI BASIN KITUI
COAL MINES IN KENYA**

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DECLARATION

This research work is my original work and has never been submitted for a degree in any other university or college for examination or academic purposes.

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DEDICATION

I dedicate this research project to my family, my two brothers Ronny Nyauchi and Dave Nyauchi who have always been a source of laughter and encouragement throughout my writing process and my father and mother Jared Nyauchi and Jerusa Nyauchi, for always pushing me to realize my potential.

I also dedicate my work to my beloved Kelvin Keri Nyambane who has seen me through every step of this research process.

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ACRONYMS AND ABBREVIATIONS

B.P.	British Petroleum
CBO	Community Based Organizations
CDA	Community Development Agreements
CSO	Civil Society Organization
CWA	Clean Water Act
DFID	Department for International Development
EPMG	External Compliance Monitoring Group
FDI	Foreign Direct Investment
FPIC	Free Prior and Informed Consent
NGO	Non-Governmental Organization
O.P. A.	Oil Pollution Act
O.S.L.F.	Oil Spill Liability Trust Fund
PAPs	Project Affected Persons
PMBOK	Project Management Body of Knowledge
PNG	Papua New Guinea
TMC	Transnational Mining Company
T.N.C	Trans-National Corporation
UNCTAD	United Nations Conference on Trade and Development
U.S.	United States of America
WBG	World Bank Group

ABSTRACT

This study examined how the employment, pollution, government regulations and social amenities as a result of extractive projects manifest in a community and contribute to their development. The study mainly took place at the Mui Basin Kitui Mines and was anchored in Communicative Action Theory. Descriptive survey research design was used to carry out the study, whereby information was collected without changing or manipulating the environment. Mui Basin Coal mines are divided into four blocks. The study targeted respondents from Block A, B, C and D, which consisted of a total population estimated at about 155,896 people. Johnson's 1959 model was used to calculate the sample size. The sample size included 100 respondents, comprising of 50 males and 50 females. Questionnaires were used for data collection. Descriptive statistics and content analysis were used in data analysis and findings presented using frequency distribution tables and inferential statistics. It concluded that employment is the most crucial determinant of community development in Mui Basin extractive project. Additionally, that Mui Coal Project had no positive impact on the establishment of new social amenities in the area as a form of community development. Pollution was extremely evident. The local communities at Mui Basin were vulnerable to the release of toxins into the air and water. Further, the Kenyan Government was increasingly under pressure to show positive impacts of the mining project, from exploration to mine closure, from local residents of Mui Basin through interest groups. The Kenyan Mining Bill 2014 was well instigated, where social responsibility to the local communities should be carried out and a CDA implemented. It was recommended that the government re-assesses the social and environmental impact of the Coal Mines and identify practical mitigation measures that need to be integrated into the project to curb immense pollution. Further, for the State to take advantage of the opportunity to develop social amenities such as schools and roads within the area.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Projects in the extractive industry have grown in intensity, number and range especially in the last two decades. This growth has particularly been seen in land owned by indigenous and Afro-descendant communities (Florez, 2013). High prices and increasing global demand has triggered the generation of mega-investments in the extractive industry. Many of which are present in countries such as Australia, Chile and Canada where the extractive sector is established. Emerging extractive industry centers include Mozambique and Mongolia, which are attracting interest from State owned as well as private enterprises (Stevens et al, 2013).

Extractive companies' activities often have adverse impacts on the economic, environmental and social lives of the local communities in which they operate. This can lead to conflict and tensions over a number of reasons including compensation for land and other assets, employment and monetary benefits, as well as, cultural, environmental and health impacts. These conflicts have a greater impact in countries with weak institutional structures, where the legal and governance frameworks do not adequately protect the rights and interests of affected communities (Stevens et al, 2013).

Latin American countries such as Colombia, Peru and Guatemala FDI have mainly centered on the natural resource sector. In 2011, FDI in Colombia was as high as 92% (Margarita, 2013). In Bolivia, hydro-carbons and mining play a big role in the collection of state revenues. Local communities in Bolivia often oppose extractive projects, a case in point is in the Haco region, a traditional area of extraction, where indigenous communities such as the Guarani have been in opposition of extraction for many years because of lack of any appreciable share of the benefits gained from oil companies in the area (Ribera & Pellegrini, 2012). Peru records a number of community disputes in the mining industry. These conflicts have led to a series of deadly clashes and the suspension and cancellation of several projects such as the Conga copper-gold project and the Tia

Maria copper mine (Stevens et al, 2013). These conflicts are mainly caused by weak distributional policies governing on revenue sharing in the mines.

Governments in Latin America have distributed revenues from rent charged in extractive projects in a number of ways, such as payment for environmental damages, political compensation or achieving improved development outcomes at the national or local level. In Bolivia, Brazil, Colombia and Peru, extractive areas receive a larger share of rent revenues than other areas as compensation for the negative environmental and social impacts from extractive projects. The rationale behind these payments is to reward extractive areas, while mitigating opposition over social and environmental concerns over the extractive industry (ELLA, 2012).

PNG in Asia-Pacific has for a number of years been host to large scale transnational extractive projects (Banks, 2009). Extractive industry disputes in PNG have mainly been between local communities and International companies. One of the most explosive disputes triggered a civil war in the country. In 1964 Bougainville Copper limited began drilling for copper in an area called Panguna in PNG. The mine soon became the world's largest copper mine. From its genesis, the Bougainville mines were entangled in controversy and conflict. In the 1960s the local land owners filed a case in the Australian high courts complaining about inadequate compensation. The court case was unsuccessful; the court ruled that though compensation had been inadequate PNG was not guaranteed the same standards as mainland Australia. In the 1980s, the conflict re-emerged. Failed negotiations over benefit sharing led to the formation of the secessionist BRA in 1988. The BRAs operations and the Government's counter response led to closing down of the mine and the death of about 15,000 to 20,000 people. The conflict ended in 1997 (Stevens et al, 2013).

African countries are experiencing tremendous growth in the extractive industry. Africa is currently being targeted by China as one of its main sources of fuel. The amount of oil that the U.S imports from Africa is expected to increase to between 25% and 30% in this decade (Standing, 2007). The National Democratic Institute for International affairs

(2007) noted that majority of the world's diamonds, 6.5% and worth 8.4 billion a year is sourced from African countries.

Extractive resources account for a large share of economic output in some countries in Africa. Mining dominates the economy in Botswana, accounting for a third of the GDP, one half of government revenues and nearly 90% of exports. The mineral sector has rapidly fuelled GDP growth in Botswana, subsequently; Botswana became the fastest growing economy from 1970 to 2000 and is largely seen as a country with best practise in Africa when it comes to extractive projects.

Currently, about 80% of staff in the mining industry in Botswana is employed by the two biggest mining companies, Debswana and Bamangwato Concessions Limited. The extractive industry is critical to the national economy of Botswana in regards to the total GDP, national revenue and employment generation (Koyi, 2012). Botswana has managed to evade issues of corruption and environmental damage that often plague mining industries. Debt financing is low and public finance is effectively managed, and the country enjoys investment-grade credit ratings. Government policy requires that revenues obtained from minerals are channeled towards investments which include physical infrastructures such as roads and schools and essential services such as health and education (Jefferis, 2009).

African countries such as Ghana, Malawi, South Africa, Nigeria and Botswana have a vibrant extractive industry. Despite these impressive prospects of growth, the dependence on natural resource correlates with low economic growth, inequality and the onset of civil conflict (Standing, 2007). According to the World Bank (2004) there is growing recognition that the process of mining and production in developing countries is having a profound impact on the natural environment and on the rights of marginalized indigenous groups.

In Zimbabwe, it is a requirement stipulated by indigenization policies for mining projects to empower local communities. These policies promote the provision of employment opportunities, ownership of the project and benefits sharing by local communities (World Bank, 2010). The American Department of State, Bureau of Africa Affairs (2005)

reported Angola's Angola as Africa's second largest oil producer after Nigeria, producing approximately 1 million barrels of oil per day, which is about 90 percent of Government revenues. Moreover, Angola exports around 1 billion dollars of diamonds annually. The extractive industry in Ghana is vital to their national development; minerals constitute 45 percent of total exports, 90 percent of which is gold, it further contributes significantly to employment and tax revenues.

Kenya also has a vast endowment of natural resources that largely remain untapped. Flagship projects such as the Base Titanium Kwale Mineral Sands Project and the oil discoveries in Turkana a clear indication of the potential growth in the industry. According to the African Development Bank Group (2014) the Kenyan Government estimates the extractive industry contributes to one percent of the National income, and less than 2 % of the Government's exports. This however is expected to grow to about 10% of the GDP. In Kenya, there is lack of clear, coordinated and harmonized legal and regulatory frameworks governing the extractive industries; the sector can be looked at as rather informal. For instance, there is no linkage between the draft mining bill and the draft energy policy on coal (DFID, 2013).

Extractive projects inspire the development of entrepreneurial ventures as well as employment opportunities. The Government of Kenya in 2013 reported that the economy had registered growth; however, the growth was not compatible to generation of employment opportunities for new entrants into the labour market, particularly women. The government hoped to put in place measures in the extractive sector that would reduce the number of vulnerable groups that require social protection through employment creation (Mutie, 2012).

1.2 Statement of the Problem

The tremendous potential that effective management of revenue from the oil, gas, and mining industries in eradicating poverty cannot be understated; these industries contribute to job creation, transfer technologies and knowledge, and generation of revenues. These benefits provide governments with a financial base for infrastructure development and social service delivery which are ultimate contributors to community development. The

extractive industries and the petroleum sector in particular, generally generate high revenues. Nonetheless, the extractive industry revenue has some characteristics that could interfere with amounts of revenue generated including uncertainty, volatility and exhaustibility, and the fact that it is usually introduced from foreign companies. These challenges make it difficult for many resource-rich countries to escape the “resource curse” where instead of experiencing exponential growth in development the cycle of poverty and conflict is exacerbated (World Bank, 2009).

Empirical research on the determinants of community development in extractive projects on the community are relatively scarce, possibly due to the reason that the extractive sector is an emerging area in research as well as other fields especially when looked at from a community lense. Higher levels of mineral dependence are strongly correlated with higher poverty and child malnutrition and mortality rates. In addition to, income inequality, low spending levels on essential services such as education, low enrolment rates in primary and secondary schools, and low rates of adult literacy, as well as higher vulnerability to economic shocks (Standing, 2007). However, there are a number of examples where the effective stewardship of natural resources has led to sustainable and equitable human development. (UNDP, 2012)

Local opposition to extraction projects has often been motivated precisely by the various economic, social and cultural impacts that an extractive project has on a community. Hence, this study seeks to establish how extractive projects contribute to community development. Community development can be looked at as solving local problems such as unemployment and poverty) and addressing inequalities of wealth and power, promoting democracy, and building a sense of community (Rubin & Rubin, 1992), Kretzmann and McKnight (1993) define community development as a planned effort to build assets that increase the capacity of residents to improve their quality of life. Improvement in the quality of life for a community living in the same place may translate to improving the physical infrastructure, or building on existing resources in the community. It is the systematic design and implementation of policies that determines whether countries can harness extractive resources for sustainable development for all, In addition to, efficient public financial management systems, mechanisms for allocating

revenues for high social returns and to sectors that create more jobs -intensive sectors within the community, measures to address displacement and mitigate negative social and environmental impacts, and establishing strategies to diversify production away from extractives(UNDP,2012).

Further more, communities, especially those in the areas where the extraction takes place, have insufficient information, voice, and participation to obtain redress for their grievances (UNDP, 2012). The study aimed at highlighting such grievances. In particular, the study examined how the employment, pollution, government regulations and social amenities as a result of extractive projects manifest in a community and contribute to their development.

1.3 Purpose of the Study

The purpose of this study was to establish the determinants of community development in extractive projects.

1.4 Objectives of the Study

The following research objectives illustrated the intended outcomes of the research study.

- i. To examine whether employment in extractive projects is a determinant of community development
- ii. To establish whether the availability of social amenities in extractive projects as a determinant of community development
- iii. To examine pollution in extractive projects as a determinant of community development
- iv. To establish if enactment of government regulations in extractive projects is a determinant of community development.

1.5 Research Questions

The following research questions set out the queries arising out of the perceived gaps of the research area of study.

- i. To what extent is employment in extractive projects a determinant of community development?
- ii. How does establishment of social amenities in extractive projects act as a determinant of community development?
- iii. How does the occurrence of pollution in extractive projects determine community development?
- iv. To what degree do government regulations in extractive projects determine community development?

1.6 Significance of the Study

This study is an informative piece that will be useful to policy and law makers in framing of policies affecting the community in the extractive sector. The study is essential in establishing the importance of effective management of extractive projects that benefits communities and the possible adverse impact it has on their development. It is therefore imperative that policy makers in Kenya embark on steps to draft and ensure implementation of policies governing the extractive sector.

This study aimed to address the existing cycle of exploitation among extractive industry players in regards to community benefits from extractive projects. According to the Information Centre for the Extractive Sector (2013) communities have high expectations that they will directly benefit from extractive projects, which they hope will provide employment for local citizens and markets for local businesses. Communities need to understand what specific impacts these projects will have on their development, which the study aims to provide to these communities as well as civil society actors working to enhance the rights of such communities.

1.7 Delimitations of the Study

The study mainly took place at the Mui Basin Kitui Mines. Mui Basin mines are located in Kitui County which is in Eastern Kenya with an area of 30,496.5 square kilometers and a population of 155,896. Mui Basin coal mining project is located in Mui ward and is divided into four blocks namely A, B, C and D, all in Kitui County. The District

Headquarter is at Mathuki Market in Mui Division. The blocks start from Mutitu constituency all the way to Karunga Mwingi North Kenya Ministry of Energy (2012). The study looked into the key stakeholders at the Mui Basin Kitui Mines, in block A, B, C and D. The local stakeholders include government, private investors and the local community.

Among the key stakeholders, the study focused on both men and women community members who live in blocks A, B, C and D.

1.8 Limitations of the Study

Language barrier was one of the limitations of the study. The questionnaires were constructed in English, which is not the local language of the ‘Akamba.’ Apart from Akamba, the questions were also asked in ‘Swahili’ which some of the locals understood. To this end, a research assistant was commissioned to carry out language interpretation and translation where necessary. Despite the language translation and interpretation being necessary for the study, it considerably slowed down the process of field research. A strict time schedule was thus incorporated to ensure maximum optimization of the time available for field research.

The study centers on the Mui Basin Kitui Mines, noting that the project in Kitui is at its preliminary stages. The study assumed that the potential impact of an extractive project on community development can generally be felt or envisioned at any stage of a project. A fully developed project such as the Base Titanium mines in Kwale was ideal to measure influence, however, distance and financial constraints acted as a hindrance.

1.9 Assumptions of the Study

The study assumed that the impact of an extractive project on community development can be felt in all phases of the project, considering that the Kitui project was ongoing and had not yet been completed. Consequently, respondents were asked questions on how they felt the extractive project would affect their lives in the long-term, as well as, how they envisioned being affected throughout the different project phases.

1.10 Definition of Terms Used in the Study

The subsequent definitions are presented for a clearer picture of the study. The definitions may be modified or altered with time and with more research into the field of extractives.

Community: A group of individuals that share the same ideals.

Community Development: A process where community members take collective action that is participatory and non-discriminative to advance common growth

Development: Advancement of structures or systems

Extractive: A process of unearthing raw materials from the ground for processing and use.

Employment: The state of being paid for work.

Government Regulations: A rule of order having the force of law that controls how an entity operates.

Pollution: Discharge of toxic substances that have a harmful effect to the environment.

Project: A temporary and unique endeavour that aims to achieve certain set objectives.

Social Amenities: Facilities that enhance the physical and material wellbeing of a person.

1.11 Organization of the study

Chapter one of this study acquaints the reader to the statement of the problem and elaborates on the specific problem addressed in this study. Chapter two presents an overview of literature and captures the relevant research associated with the problem addressed in this study, it also describes the theoretical as well as conceptual framework. Chapter three elaborates on the methodology and procedures used for data collection and analysis. Chapter four presents the empirical findings of the study. In addition, the chapter presents the analysis of the data and presentation of the results. Chapter five offers a summary and discussion of the researcher's findings, implications for practice and recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents an extensive review of literature and analysis of secondary data such as published books and journals both electronic and print, as well as website pages with pertinent information informing the study.

2.2 Overview of the Research Study

It requires a visit to extractive sites which mostly located in remote areas to fully comprehend the impact of extractive projects on communities living within these sites. Those who are most affected by changes and consequences of extractive projects are the people living in the vicinity of the projects Guesnet & Frank (2014). The most affected by the exploitation of resources are the most ignored when it comes to decision making or policy setting. Most decisions take place at the highest level between governments and extractive companies Catholic Relief Services (2011). These communities tend to be sparsely populated and, consequently, do not get the attention of their elected leaders. They also do not have easy access to information or media and end up hitting a dead end as to who and where to address their grievances. If negative impacts of extractive projects are not adequately prevented or mitigated they can present serious grievances.

Extractive projects contribute a big chunk of annual Government revenues in many countries. Extractives contributed to 74% of the annual Government revenues in Nigeria in 2010. The mining sector employs 22 million to 25 million people worldwide which is approximately 1% of the total global force. In some countries like Botswana, Chile or Peru employment from the extractive sector varies from 3% to 7% of the local work force (Leonardo & Claudine, 2012).

Communities that directly depend on natural resources and environmental services for their livelihoods are disproportionately affected by extractive projects. Often times community lands, rivers and ecosystems are damaged and communities displaced by mining activities. Huge industrial wastelands are created from vast open pit mines; use and poisoning of water systems; deforestation; contamination of top soil or air pollution.

The rights of farming, pastoralist and indigenous communities are consequently threatened. Surprisingly, New extractive technologies introduced to the market requires more water to be used to obtain the minerals from their source. The thirst for these minerals is a growing threat to water, fertile soil and food, the implications being potentially severe (UNDP, 2012).

In cases where mining companies attempt to get formal consent from affected communities, this is often tokenistic achieved through propaganda, impressive presentations, and extremely attractive promises for the future. The community is promised employment opportunities and investment in social amenities, including healthcare facilities and schools. Individuals are told to expect generous sums of money from compensation and resettlement. Local people who are either illiterate or unable to access more information seem easily swayed by such offers, it is rare for communities to be offered objective assessments including the potential negative impacts of mining (Standing,2007). It's a common feature nowadays for extractive companies to hire community liason officers, which is a step in the right direction, though the liason officers are more for public relations.

An extractive project can be in itself a source of conflict, it is important to distinguish between the different sources of conflict within these projects. The first source of conflict is to do with the impact on communities and their environment given the adverse changes that an extractive project brings about in land cover and use, as well as the economic, social and cultural relations of the affected communities. The other source of conflict occurs around the compensation process; the level of compensation, distribution of benefits and matters of inclusion and exclusion of others, if not properly checked, may bring about violent conflicts (Guesnet & Frank, 2014). This study examines in detail the first identified source of conflict, and holds a magnifying glass to the impacts of extractive projects on community development.

Unless properly managed, involuntary resettlement may result in long-term hardship and poverty for affected persons and communities, as well as environmental damage and social stress in areas which they have been displaced. (NRMP,2011). Assessment of the

social and environmental impacts and identification of mitigation measures need to be integrated into these projects. Clearly-established obligations by private companies to adhere to national laws and regulations are extremely important and need to go beyond voluntary arrangements for corporate social responsibility (UNDP, 2012). The State should play the role of facilitator of investment as much as it should be a regulator establishing laws and policies that mitigate environment and social impacts or take advantage of the opportunity to develop social amenities such as schools and roads (National Democratic Institute for International Affairs, 2007).

2.3 Determinants of Community Development on Extractive Projects

The first part of this chapter examines employment as a determinant, especially looking at the types of employment offered by extractive projects and whether these offers are beneficial to the community in the long run. The first section also analyses pollution as a determinant, specifically looking at various examples of pollution on the environment from such projects as well as who is responsible for addressing compensation after adverse pollution effects. The second part of the study delves into how social amenities such as schools and health facilities in extractive sites are distributed and the obstacles preventing the establishment of such amenities; the section also analyses government regulations as a determinant of community development on the process of extraction and how this in turn affects the community.

2.3.1 Employment in Extractive Projects

Wall and Pelon (2011) see employment as a benefit sharing measure. Benefits from extractive projects should not just be limited to compensation for damages but should also contribute positively to the lives of affected communities. Kenya's Mining Bill (2014) stipulates that the holder of a mineral right shall submit a detailed programme for the recruitment and training of citizens of Kenya, to ensure skills transfer and capacity building for the citizens. This is one of the conditions that should be met before granting of a mineral right, the Cabinet Secretary is required to make regulations providing for the replacement of expatriates, the number of expatriates per capital investment and provide for collaboration and linkages with universities and research institutions to train citizens.

It also stipulates that the cabinet secretary shall issue guidelines making further provisions to the section. Generally, incidences where this has been implemented are minimal. For one to obtain a prospecting license in Malawi, for instance, there must be a proposal for the training and employment of Malawi citizens in the projects (Koyi, 2012), which is also the case in Kenya. However, the extent of enforcement of the training and employment proposals, by local authorities is questionable in these countries.

Extractive projects rarely seem to be invested in the economies of the local communities surrounding the areas in which they operate. They constantly fly in expatriates to work in their companies and import raw materials, goods and services from overseas (Cademartori, 2002). Technological improvements in the extractive sector has decreased the need for labour, this together with the fly-in-fly out operations of expatriates has diminished the benefit in terms of employment that communities are accorded from such projects (Wall & Pelon, 2011).

Most of the expatriates in extractive projects in Kenya, for example, are either in management or director position. The nationals are largely made up of skilled and unskilled workers which consists of positions such as welders, plumbers, electricians or crane operators. For the expatriates, skilled employees include surveyors, drillers, and vibe technicians. Management positions for the expatriates include managers (operations, finance), supervisors, rig superintendents and tool-pushers (Omolo, 2014). As much as an extractive project comes with employment opportunities to the local community, the jobs may not end up being beneficial to the communities. They end up getting a raw deal since they do not often clinch management or director positions which are left to expatriates.

The fact that one is gainfully employed does not necessarily mean that the individual will be driven out of poverty, rather the job may be a poverty coping mechanism, hence the quality of employment is of utmost importance (Omolo, 2014). Oiro et al (2004) found that not all jobs are welfare enhancing, they do not always move an individual out of poverty, for example, in Kenya 50 percent of unskilled private sector workers were found to be poor while for skilled private sector workers, 33 percent were found to be poor,

meaning that they could not adequately meet their basic needs. These statistics show that it is highly unlikely that the employment opportunities provided will act as a big push out of poverty.

Unfulfilled employment expectations are a main source of conflict in mining sites in Peru. Since large-scale extractive industry companies are generally unable to absorb local labour demand, tensions arise (ELLA, 2012). Most of the agitation for resource development and revenue sharing come from local communities. Community members are often determined to share benefits and see mining plus the jobs it creates as an opening to do so (Macintyre & Foale, 2004). Legal provisions to impose redistribution at the local level are mostly implemented when the local community has very limited benefits, despite bearing most of the negative impacts of extractive projects (Wall & Pelon, 2011).

The management team at mines are often faced with the decision of having to take on a major mining operation using their own equipment and personnel or outsource the operation out to a specialized mining contractor. Outsourcing some of their mining operations helps mining companies to concentrate on their core businesses a practice that is referred to as contract mining as opposed to owner mining where the mining company uses their own materials and equipment. Navachab mine in Namibia which practices “owner mining”, has managed to increase permanent employment at the mine. Since 2004, many employees have been recruited as permanent staff. A 2007 study report by Navachab mine, a mining company in Namibia revealed that the company employed 225 permanent workers, 56 casual workers and only 5 subcontract workers. More than half (56 percent) of the employees at the mine were production personnel, followed by professionals (10 percent). Only about 7 per cent of the employees were highly skilled, as management and skilled artisans, while 5 per cent were unskilled personnel (Koyi, 2012).

The GDP growth in Botswana has largely been due to the mining industry, however, its direct impact on employment has been smaller. The sector is relatively capital-intensive and mines employ around 3% of the employed labour force. In terms of employment the impact has been indirect through the revenue the government receives. Government is by

far the largest employer in the country, employing over 40% of the employed labour force, and this is only possible on the basis of revenues received from the mining sector (Jefferis, 2009). The case in Botswana is the exception to the rule in most African governments with most not being able to satisfactorily account for revenues from extractives that have contributed to national development including the indirect creation of employment opportunities.

Extractive projects can also possibly affect the community through loss of salaried or self-employment which can occur in both in rural and urban displacement resulting from such projects. When a community is displaced due to an extractive project unemployment or underemployment may become a long-term issue after physical relocation. The Creation of new jobs and opportunities for them is a challenge and requires substantial input. Transitional income support should be given to workers who lose employment in the process of relocation, they should also be compensated for lost income for the duration of impact. Further, PAPs should be entitled to transitional assistance such as moving expenses or temporary residence to help them cope as they await employment and other opportunities (NRMP, 2011). These approaches may sound idealistic and difficult to implement but in the long-term contribute to the success of a project. It is essential that these approaches are explored and budgeted for at the conception phase of a project since it might prove challenging to implement mid-project.

2.3.2 Pollution in Extractive Projects

Extractive projects have significant negative environmental impacts. In the case of oil and gas, improperly planned seismic tests and drilling activities, flaring of excess gas, deforestation from onsite operations. In the case of mining, air, soil and especially ground water and surface pollution can take place (Leornado & Claudine, 2012). The local communities are vulnerable to the release of toxins into the air and water. The industrial use of water can reduce the amount and quality of the water available for use by the community. Mine and mineral processing in extractive projects requires extensive land and water resources. People who have lived, farmed, grazed their animals, fished and held areas sacred may be displaced to make room for machines, blasting and disposal of toxic waste (Jaakko, Stevens, Lahn & Lee, 2013).

The critical question is when there is damage to the environment, whose responsibility is it between the Government and the TNCs to mitigate the damage. In the case of the affected community compensation, there is often lack of support especially from the Government when there is an environmental disaster caused by extractive projects. The affected communities, in developing countries especially, have little means and resources to prove that environmental damage occurred if the damage is not evident. This lack of support from Government in terms of supervision and loopholes in policy legislation which often do not hold TNCs accountable leaves the courts as the only option for redress. The court process can be explored through Public Interest Litigations which is a long, tedious and expensive affair that can be difficult to sustain, even with assistance from rights organizations or the civil society.

The Kenya Mining Bill (2014) states, that a mineral right or any other license or permit, does not exempt a person from complying with any law concerning the protection of the environment. It stipulates that a mineral right shall not be given to a person unless the person has obtained an environmental impact assessment license, social heritage assessment and the environmental management plan has been approved. It further states that an applicant prospecting a license, a retention license or a mining license shall provide an environmental protection bond of financial security to cover costs of implementation of the environmental and rehabilitation obligation.

In 2010, an uncontained release of oil and natural gas at the BP Deepwater Horizon oil drilling rig in the U.S produced the largest oil spill that has occurred in U.S. waters, releasing more than 200 million gallons over approximately 84 days. The resultant loss was estimated at \$41 billion by BP. The incident cast a spotlight on the U.S oil spill liability and compensation framework. The OPA included a claims process for compensating persons affected by an oil spill. Overall, claims for compensation must first be presented to the responsibility party before being presented to the OSLTF. If the responsible party denies all liability, or if the claim is not settled by payment in 90 days after the claim was presented, the matter could then proceed to court. If the responsible refuses to pay for a claim that is processed and awarded with monies from the OSLTF, these costs may be recovered from them by the federal government (Ramseur, 2011).

It is important that extractive industries be better regulated to reduce the negative effects of human environmental health. Issues of oversight and enforcement of health protections should be front and center in extractive industry projects (Nolen et al, 2014). The extraction activities of Tiomin Inc in Kwale had the potential of causing adverse radioactive impacts, as large quantities of radioactive uranium and thorium were detected in the titanium deposits. However, Tiomin Inc did not publish any radioactive substance management and monitoring plan (Cajati, 2008). The issues raised by the Deep Water Horizon spill highlight a central policy debate: Allocation of catastrophic environmental damage costs by policy makers; the share of costs to be borne by the responsible party such as the oil vessel owner or operators compared to other groups, such as the oil industry or the Government (Ramseur, 2011). The demarcation of costs in case of an environmental catastrophe ought to be made clear, to avoid confusion resulting in loss of compensation for community members involved.

For coal mining especially, occupational health injuries and illnesses from extractive industry projects can be particularly costly for mining; it causes extremely high occupational mortality due to issues like being exposed to dust, heat, toxins or even harmful gases (Nolen et al, 2014). Some health risks for employees related with extractive projects vary, however, one can generalize. Eister (2003) studied miners in Australia, North and South America and found prevalence in risks such as decreased life expectancy, increased frequency of cancer of the trachea, bronchus, long stomach and liver, increased frequency of malaria and dengue fever among other diseases (Nolen et al, 2014).

In Tanzania, a mining license can only be given if the applicant submits a feasibility report that includes environmental and health safeguards. The use of Environment Impact Assessments for projects is promoted by the National Conservation Strategy Coordinating Agency in Botswana (Koyi, 2012). Botswana is relatively free of the corruption and environmental damage that is often associated with mining projects. Public finances are strong, debt is minimal, and the country enjoys investment-grade credit ratings. Its mining operations have traditionally had a limited environmental impact (Jefferis, 2009).

2.3.3 Social Amenities in Extractive Projects

Some of the adverse impacts, local communities face in their social life include displacement of populations and disruption of life. The sudden arrival of expatriates can lead to increased competition for local resources, such as land, especially, when the extractive projects competes with other uses of land such as farming or tourism and also when it is inhabited by indigenous people who look to land as their source of living and the core of their collective identity and spirituality (Leonardo & Claudine, 2012). Policies on extractive projects rarely address the issues regarding the social impacts such projects have on a community and whether affected communities deserve remuneration on the same.

Mining operations are often initiated in rural areas, which can trigger various social phenomena including sex trade. Since the extractive industry is male dominated, men usually relocate to work at mines, leaving behind their families. In some areas the impact is adverse, for example, HIV transmission in Southern African countries has been linked to mining work through sex trade that manifests around mining communities and the loss of family coherence (Nolen et al, 2014). Ways of mitigating the impact of sex trade as a result of extractive projects ought to be conceptualized at the project planning stage. Successful mitigation of the phenomena should adopt a multi-sectoral approach.

It is perhaps necessary that possible solutions around collective community compensation of social amenities are examined. Compensation can also be claimed by a community or a particular group and does not essentially have to be individuals or families. Communities living on communal lands that permanently lose land and other resources, and are denied access to them should be eligible for compensation, examples of community compensation could be for resources such as public toilets or market places. The rationale for this is to mitigate the impact of projects on the socio-economic status of communities where adversely affected (NRMP, 2011).

A key area that has recently gained traction in various sectors including academia and civil society is whether private sector can replace government in the provision of basic services. Mineral projects are increasingly being developed in marginalized areas in

developing countries outside the reach of government provided public services such as electricity or water. Hence, the provision of such services rests on the extractive companies (Wall & Pelon, 2011). According to (Ferguson, 2005) in developing countries especially, TNCs tend to start providing services that the government ought to provide such as schools and hospitals. Some of the TNCs provide security services, which is really the government's role. Affected community members suddenly have imposing and heavily armed security personnel in their local area, this is a tactic used to intimidate indigenous communities. Gold fields a gold mining company in South Africa, for example, spent nearly 1.1 million Rands in 2002 upgrading a school for the Madombisha community in Limpopo province. Six extra classrooms, a laboratory and a library were built (Koyi, 2012). The private sector in development argument can be seen to be practical if many such cases were replicated.

Indigenous groups mining revenues can occur in a number of ways, for example: cash payments linked to project milestones such as signing of agreements and project approvals; extractive rent for use of land; or royalties linked to the volume or value of minerals extracted or to profits from extractive companies. The 'arrival' of extractives revenues might trigger entrepreneurial, wealth-creating responses, rather than seeking for quick cash. Indigenous people should as much as possible see revenues from extractives as a platform from which to launch entrepreneurial activity or to support social and cultural activities and values that could substantially enhance community welfare (O'FairChealaigh, 2013).

There are countries that have set up systems for benefit sharing with poor rural areas where the resources are extracted. Nonetheless, those benefits are often times misappropriated by the elites in the society before they reach persons living in these rural areas. It is common for the people who live closest to the sources of the natural resource wealth to be among a country's poorest citizens (Catholic Relief Services, 2011). Direct negotiations with community representatives, was offered by a company in Bolivia undertaking the North La Paz project in Bolivia. Minimal compensation was negotiated, in which minor public works were included in the construction of town squares and

refurbishing of schools. However, these compensations were aimed at weakening local resistance.

Some best practices that extractive projects can borrow from in terms of mitigating social impacts is from companies such as KCM which is the largest private sector employer in Zambia, KCM has in place a social policy, which is primarily focused on community support (Koyi, 2012) In Bolivia, Brazil, Colombia and Peru, areas where extraction take place receive a larger share of rent revenues to compensate for the negative environmental and social impacts from extractive projects (ELLA, 2012).

The Government in Botswana, also, requires that revenues generated from the mining industry are channeled towards investment spending and that consumption spending is financed from other avenues. Governments can use support revenues from extractive projects particularly through taxes are ploughed back to the affected communities. (WBG, 2012).

2.3.4 Government Regulations in Extractive Projects

Adverse impacts can occur where governments fail to set out concise regulations. Mining projects are usually carried out in environments where government institutions may be absent, weak or low in capacity, there may be gaps in essential public services as well as enforcement of law (Wall & Pelon, 2011). Bolivia is a classic example due to its economic structure which is mostly based on primary commodities in general, particularly, hydrocarbons and minerals. Considering the important role of hydrocarbons and mining for state revenues, policies concerning extraction define the politics of Bolivia. Communities where extraction takes place are often marginalized rural communities lack of redistribution of revenues and compensatory policies at a local level, results in unfair outcomes (Pellegrini & Arismendi, 2012). (Sovacool, 2010) in his research found no evidence of the 'resource curse' in five mineral-rich South East Asian countries and regarded the nature of political institutions, including the enforcement of property rights and a predictable judicial system, as a critical part of the explanation.

In Kenya 65% of land is communally owned, 70% of this land has already been allocated to oil companies without free, prior and informed consent of those who own the land

communally (DFID, 2013). Most extractive projects operate in very rural and marginalized places where communities own land communally. Owning the land communally is an African tradition that has been passed down from generation to generation, a title deed is, hence, a foreign concept to many of the local communities, yet the fact that the land belongs to them cannot be denied. This also affects individuals in Africa especially whose family land has been passed down from generations before, who often will not possess a title deed. Furthermore, these communities are often marginalized and do not have easy access to government services, such as securing of title deeds

Coast mining right forum, an organization in the Kenyan Coast, made up of the civil society and local communities opposed Tiomin Resource Inc, a Canadian company from a mega-project for exploitation of titanium deposits in the Kwale region in Kenya. The project was estimated to displace about 500 indigenous Digo and Kamba people and contaminate local soil and aquifers with heavy metals. The project would displace local farmers forcing 450 families to be displaced. The Tiomin Company never provided any written documents on the subject. The families would be displaced for 20 years for the land to be used for extraction activities, after which, it would be reclaimed and the families returned. However, the land would no longer be cultivated as a result of the drastic changes to the soil structure. The spokesman for the farmers' movement in Kwale, Kenya pointed out that most of the affected families did not have title deeds and that compensation negotiations should treat those who have title deeds and those who don't have title deeds equally so as not to cause social tension (Cajati, 2008).

Some mining companies have sought to bridge the gap with communities through mechanisms such as employment of community liaison officers who regularly consult and pass information and company decisions to the communities. These individuals tend to be educated members of the community who can speak the local language and understand the culture. In comparison, extractive companies often have a strong hierarchical structure, with a small number of people in top management who direct the company. Social systems of the indigenous peoples they come across, on the other hand, generally lack hierarchical leaders, are highly devolved and are big on consensus building in decision making. Companies' take the approach of insisting that indigenous groups

identify ‘leaders’ and ‘decision makers’ with whom they can engage and who can represent the indigenous group during agreement making and monitor compliance of the group with agreements signed (O’FairChealaigh, 2013). The danger being that these individuals may be a public relation ploy, where the community’s interests are not adequately represented by the employee or the post simply serves as the company’s defense mechanism against complaints. There is also the question of imbalanced power relations where the company sets all the conditions for negotiations. From the venue to the language to be used, to the overall speaking duration (Hoff, 2014)

In the recent past, however, communities have begun advocating and pressurizing extractive companies for increased commitment to more equitable benefits. This improved ability of communities to exert pressure is linked to, increased awareness of their rights, increased literacy and education levels and improved access to technology and information. The internet has been an invaluable catalyst for communities and helped NGOs and other interest groups to be much more successful in putting a spotlight globally of perceived injustice. Improved access to communications and increased extractive sector focused advocacy has raised community expectations for more substantive benefits from extractive projects. Employees have also raised their expectations of responsibilities of companies they work for and their prioritization of CSR operations as well as human rights (Wall & Pelon, 2011).

In the U.S in 1990 the OPA was signed into law. The OPA liability and compensation framework includes a combination of elements that distribute the costs of an oil spill between the responsible party and a trust fund, which is largely financed through a per-barrel tax on domestic and imported oil (Ramseur, 2011). The OPA provides an excellent example of how Governments can take pro-active steps to help mitigate extractive industry disasters should they happen. The identifying of the responsible parties, for instance, simplifies the compensation process, because the responsible party assignment makes it unnecessary for agencies and courts to determine the parties liable.

In the absence of a government framework regulating extractive projects especially on contentious issues such as benefit sharing companies are left to develop their own

approaches (Wall & Pelon, 2011). Companies insist on identifying specific ‘landowners’ for a mine site and flow in of compensation and mining revenue to this group. This may result in many people with a legitimate claim missing out (Sillitoe & Wilson, 2003). Government decentralization can be strengthened by increasing the transparency and traceability of financing from extractive regions into development initiatives. In some countries percentage royalty or tax is allocated to decentralized authorities by law. Royalty or tax distribution in Madagascar is 42% to communes of extraction, 21% to the region and 7% to the province. In Peru, for example, 20% goes to the district of exploitation, 40% to other districts and provinces in the region, 20% to the region including 5% to universities. Royalties that are paid to the state rarely revert back to the affected community even when there is legislation stipulating the same. Decentralization of benefit sharing is a trend, although most States still prefer all major taxes flowing to a central fund where they can then be dispersed for the good of the public (Wall & Pelon, 2011). In Kenya Royalties are paid to the state with the cabinet secretary given the responsibility to determine the rates.

Indigenous local communities have the capacity to determine what development means to them. In cases of benefit sharing, civil society groups working exclusively on the rights of such communities ought to advocate and lobby for the independence of communities to make decisions in that regard (Levitus, 2009). Sub-national community investment groups can be established consisting of government representation, localized counsels to ensure community views and requirements are taken into account and a secretariat to set up to ensure the group is operational and effective. can be used to allocate other sources of development funding, local allocations of royalty payments among other resources (DFID, 2013).

Governments are increasingly under pressure to show positive impacts of mining projects from exploration to mine closure (Wall & Pelon, 2011). In the cases where government regulations on extractives have not been enacted then community agreements with a TNC can act as an alternative. However, the absence of any universally applicable standards or benchmark of quality for community engagement and development agreements, and in many cases the absence of requirement within government regulation has often resulted

in delayed and hugely varying agreements between industry, communities and other stakeholders. These discrepancies in practice within the mining sector and the extractive sector in general, and the absence of any agreed evaluation of the necessary components and quality of community development initiatives could mean that TNCs might maintain that they had fulfilled their contractual obligations towards a host nation, despite considerable dissatisfaction and disagreement with government, NGOs and local communities (Sarkar et al, 2010).

At the end of a negotiation process an agreement should be reached. Guesnet and Frank (2014) suggest that the agreement should be between, the company and communities or between all two stakeholders and the government. However, the situation on the ground manifests in confusion and lack of accountability when the state is not involved. The State is not always present during negotiations (Guesnet & Frank, 2014). Governments face two main challenges when it comes to determining policy regulations for the extractive industry. First, they must create a business friendly atmosphere for investors. Secondly, they must address concurrent domestic policy issues, such as environmental impact on communities or equitable benefit sharing (National Democratic Institute for International Affairs, 2007). A legal and regulatory framework encompassing community engagement would go a long way in evading conflicts in extractive projects fueled by lack of proper community involvement (Smith, 2013).

CDAs go a long way in avoiding and minimizing local conflicts if they enhance the benefits local communities get from the projects, help ensure negative impacts are mitigated or compensated for and establishes lines of communication between communities and investors as a means of providing early warning of emerging problems and ways in which these problems can be resolved (O’FairChealaigh, 2013). In Kenya the mining bill (2014) actually states that where applicable social responsibility to the local communities should be carried out and a CDA implemented.

Inter-generational equity is another factor that has been disregarded in most extractive regulations. In PNG indigenous social structures in Bougainville lacked any means for ensuring inter-generational equity in benefits derived from mining revenues and

compensation payments. Consequently, a growing tension between generations was manifested, amongst and within families, which in the long run reached its breaking point and resulted in the emergence of the Bougainville Revolutionary Army, leading to the Bougainville rebellion, which caused widespread social disintegration and the abandonment of the Bougainville copper project Rio (Tinto Filer, 1991). The finite nature of mineral resources puts in question inter-generational equity, whereby long-term benefits from an extractive project can be shared by later generations who may experience on-going environmental impacts from abandoned mines but miss out on mining benefits (O’FairChealaigh, 2013).

In Ghana, a CDA constituting an agreement between Newmont an extractive company and a local community states regarding unskilled labor stipulated that Newmont would endeavour to hire local community citizens from impacted by its activities. In addition, Newmont agreed to working progressively to increase the number of local communities employed from 35 percent of their workforce (including contractors) to 50 percent within ten years. The CDA further provides legal definitions for citizens of local communities, distribution of labor, procedures for recruitment and monitoring and reporting details. The CDA defines education and training principles and provides details of the agreement which may contradict the law or future law (World Bank, 2010).

2.3.5 Mui Basin Coal Mines in Kitui

There is opportunity for the mining sector to grow in Kenya with a proper programme of policy, legal and institutional reform as well as capacity building. Draft legislations should be carefully analyzed and put in line with other extractive industry policies and legal framework (Smith, 2013). Unless mechanisms are integrated into Kenya’s laws and policies that ensure communities get maximum benefits from extractive projects regulatory controls of land use activities could lead to both underdevelopment and increased conflict over land. (Africa Biodiversity Collaborative Group, 2013)

The concession of the Mui Basin coal mining contract was awarded to a Chinese firm Jung’u with its subsidiary Fenxi Mining industry limited undertaking the actual mining. The deposits are said to be so large that mining can go on for years (Mutie, 2012). Mui

Basin Coal mines risks facing adverse environmental impacts especially in the area of waste management. Chemical effects are likely to be experienced by the community around especially if there is no proper handling of the highly toxic waste. These chemicals, a result of industrial operations or dumping refuse, include Sulphur-dioxide, cyanide, arsenic and mercury vapor, which would be hazards to the environment (Mathu & Davies, 1996).

2.4 Knowledge Gap

Globally, literature shows that companies involved in extractive projects venture into social corporate activities that are always aimed at improving the socio-economic or socio-cultural lives of the people surrounding their operations (Stevens et al, 2013). Examples include the British Petrol, Tiomin World, Base Titanium, Shell, etc. In Canada alone, Tiomin created recreational centers between 1990 and 1996 that were to be managed by the locals (World Bank, 2004). In Zimbabwe, mining projects must comply with the new indigenization policies established to empower local communities. Such regulations focus primarily on the provision of employment opportunities to local residents, project and company ownership and benefits sharing (World Bank, 2010).

In Africa, a company like Base Titanium in its extractive projects has helped raise the economic standards of the people of Mauritius and Madagascar by 45% and 41.12% respectively. This is as a result of jobs created by Base Titanium for the skilled and non-skilled locals, the market that is created for their local products, growth of towns, resettling of those who had issues with land issues, and building of schools, among other. This for a long time has made the mentioned countries boost their image in the continent and beyond (World Bank, 2009). According to the African Development Bank Group (2014), Kenya has a vast endowment of natural resources that largely remain untapped. However, the exploitation of non-renewable natural resources has often triggered violent conflicts, degraded the environment, worsened gender and other inequalities, displaced communities, and undermined democratic governance. In contrast, there are plenty of cases where the effective management of a society's natural resources has led to sustainable and equitable human development (UNDP, 2012).

As established from literature reviewed, empirical research on the determinants of community development in extractive projects on the community are relatively scarce, possibly due to the reason that the extractive sector is an emerging area in research as well as other fields especially when looked at from a community lense. Furthermore, in Kenya, communities, especially those in the areas where the extraction takes place, have insufficient information, voice, and participation to obtain redress for their grievances (UNDP, 2012). This study is aimed at highlighting such grievances. In particular, the study examined how employment, pollution, government regulations and social amenities as a result of extractive projects manifest in a community and contribute to their development.

2.5 Theoretical Framework

The theoretical framework introduces and describes the theory that provides a lens, into which the research problem under this study was examined.

2.5.1 Communicative Action Theory

Habermas's paradigm of the communicative action in the communicative action theory of community development focuses on the communicative mind, communication and rationality as well as the communicative community (Mitrović, 1999). Communicative action is essentially action intended to promote common understanding and promote cooperation in a group, rather than designed simply to achieve one's personal goals (Habermas, 1984).By that definition,, communicative action theory when applied to extractive projects implies that a consensus should be reached between all stakeholders during and before the commencement of a project. Genuine stakeholder consultations ought to be held to achieve consensus where the interests of those concerned are considered, as opposed to having consultations as a public relation stunt. Communicative action theory links its view to the theory of planning where Habermas emphasizes widespread public participation, sharing of information with the public, reaching consensus through public dialogue rather than exercise of power, avoiding privileging of experts and bureaucrats, and replacing the use of the technical expert with the reflective

planner (Argyris and Schön 1974, Schön 1983, Innes 1995, Lauria and Soll 1996, Wilson 1997).

In Communicative Action two or more actors establish a relationship and seek to reach an understanding about the situation in order to coordinate their actions by way of agreement (Bolton, 2005). Further implying that in extractive projects stakeholders specifically the government, community and TNC should operate symbiotically. It should be clear from the onset how all these entities stand to be impacted as well as benefit from the project. In reality, it is usually clear for the government and TNC but not for the community.

In the model of communicative action, social actors have the same interpretive capacities as social-scientific interpreters: thus social-scientific interpreters cannot claim to be neutral observers in their definitions of social actors' situations (Habermas, 1984). The assumption on the ground especially concerning projects 'brought' to communities is that the actors bringing the project have superior knowledge to that of the PAPs. According to (Habermas, 1984) an utterance is a sincere or authentic expression of one's own experiences; therefore, one's utterance could not possibly be superior to another's. Communities affected by extractive projects ought to give their views on how such projects impact their lives, these views should not be considered inferior. From this definition policy technocrats in extractive projects, can also not be considered as neutral and not affected by external issues. Community and government voices cannot be considered as neutral; these actors should therefore find a middleground on issues concerning the project in order to enhance its success. They are whether, consciously or not, participants whose claim to being objective comes from the reflective quality of their participation

Changes in social structure cannot only be a result of external influence. While learning processes have to be explained with the aid of empirical analysis, they are also seen as possible solutions to the problems at hand, these solutions can be insightfully re-constituted in the perspective of participants (Habermas, 1984). An extractive project should thus be informed by lessons learnt and best practice from other similar projects.

Habermas further argues that the process of becoming an individual is a socialization process and that motivations and range of behavior are symbolically re-structured in the course of identity formation, individual intentions and interests are tied to language and culture and thus can be subjected to interpretation, discussion and change. The social systems are maintained by the influence of external surroundings, as well as by specially communicative action depending on the internal nature and surroundings community members (Mitrović,1999).

It is important to recognize the role of communicative action in expanding the space reserved for communication of people who, through mutual communication, bring about rational decisions founded upon rational debate and consensus instead of upon strengthening of authoritarian government forms and system enforcement. Issues of social life in the society, including the issue of social conflicts, can be solved by rational discussions as well as free communication among people (Mitrović,1999). The communicative action theory when applied to extractives supports mutual and genuine exchange of information between relevant stakeholders as a way of unearthing the possible and occurring impacts of a project and subsequently mitigating these impacts.

2.6 Conceptual Framework

The conceptual framework maps out the main concerns in extractive projects.

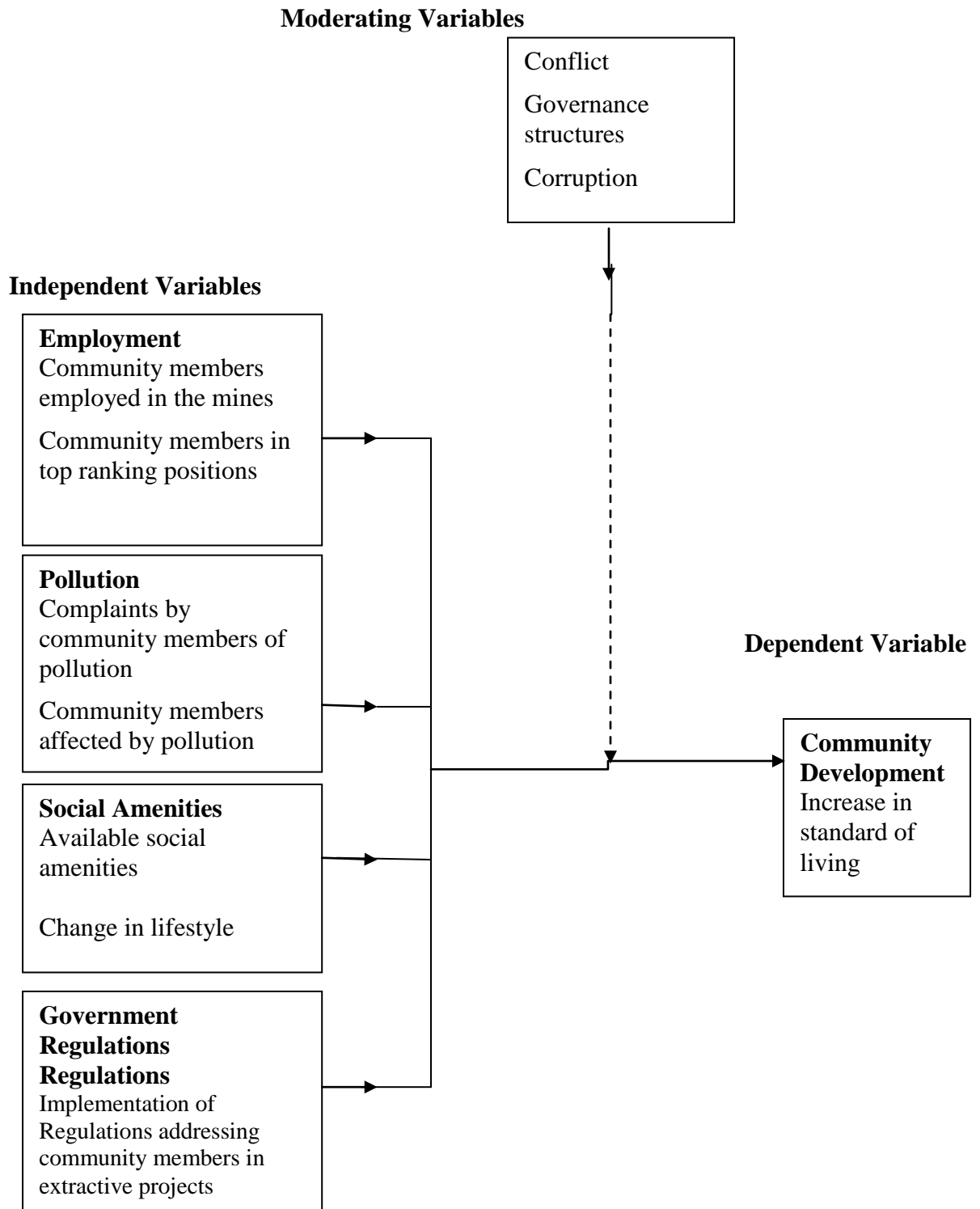


Figure 1: The Conceptual Framework

2.7 Summary of Literature Review

The first part of this chapter is an analysis of literature related to the research study. The second part examines employment as a determinant of community development in extractive projects, especially looking at the types of employment offered and whether they are beneficial to the community in the long run. The section also analyses pollution as a determinant, by looking at various examples of pollution on the environment from such projects as well as who is responsible for addressing compensation after adverse pollution effects. The second part further delves into how social amenities such as schools and health facilities in extractive sites are distributed and the obstacles preventing the establishment of such amenities. Additionally, the section also analyses government regulations as a determinant of community development on the process of extraction and how this in turn affects the community. The third section of the chapter shows how the study was anchored in Communicative Action Theory. The following section shows the knowledge gap established at the course of the review of related literature. Further, the chapter presents the conceptual framework, which is a concise description of the phenomenon under study accompanied by visual depiction of the variables under study

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology that is used in this study. The research design, the target population, the sampling method and research instruments are described. The instrument used to collect the data, including methods implemented to maintain validity and reliability of the instrument are analyzed. The statistical steps followed in this research project included identifying of research questions and establishing whether the data is obtainable. The second step was identifying the population of interest and a survey with a representative sample of the population. This is followed by preparations for collecting of data which includes identifying of variables and types of variables as well as the limits of measurement. The data was then analyzed followed by a presentation of the findings and limitations of the study.

3.2 Research Design

Descriptive survey research design was used to carry out the study, whereby information was collected without changing or manipulating the environment. The Office of Human Research Protections (2012) defines a descriptive study as “Any study that is not truly experimental.” The design facilitated provision of information about the naturally occurring behavior and characteristics of the most affected stakeholders on matters influencing community development in an extractive site. The purpose of descriptive research was to examine a phenomenon that was occurring at a specific place(s) and time. It was concerned with conditions, practices, structures, differences or relationships that existed, opinions held processes that were going on or trends that were evident.

Correlational research which is classified as a descriptive method was also carried out. It is categorized because it describes what exists at the moment such as conditions, practices, processes, structures etc. conditions, practices, processes or structures described are markedly different from the way they are usually described in a survey or an observational study. Correlational research comprised of collecting data to determine

whether, and to what extent, a relationship existed between two or more quantifiable variables (University of Mumbai, 2015).

The exploration of the relationship between variables provided insight into the nature of the variables themselves as well as an understanding of their relationships. If the relationships are substantial and consistent, then predictions can be made about the variables. The study did not specify the cause-and-effect relationships between variables under consideration. It merely specified parallel variations in the scores on the variables (AEN Research Institute, 2015).

The study was conducted by means of a cross-sectional analysis whereby investigation involved a sample of elements selected from the target population measured at a single point in time.

3.3 Target Population

Mui Basin Coal mines are divided into four blocks. The study targeted respondents from Block A, B, C and D, which consisted of a total population estimated at about 155,896 people. The selection criteria included the respondents most affected by the coal mines project. Preference was given to the affected local community and the overall content and quality of the answers given in terms of the insight it offered (Mutie, 2012).

3.4 Sampling Procedure and Sample Size

Stratified random sampling was used in the study. In the sampling technique, the population was divided into distinct sub-populations called strata, within each stratum a separate random sample was selected (Fienberg, 2003). The respondents were clustered into the four (4) Mui Basin coal mining zones and simple random sampling applied in the final selection of the respondents to the survey questionnaires. The mining zones include Block A (Zombe), Block B (Mutito), Block C (Mui) and Block D (Karung'a).

In this study, the use of stratified sampling was because each stratum may have different values for the responses of interest and to improve the estimation for each group separately (Ahmed, 2009). The study formed a generalizability or transferability to other

affected populations. Stratified sampling ensured that all parts of the population were represented in the sample in order to decrease error in estimations.

Johnson (1959) provides a simplified model to calculate sample sizes. This formula was used to calculate the sample sizes in the study. According to the model, the sample size doesn't change much for populations larger than 100,000. This study targeted a population of 155,896 people.

$$n = N * X / (X + N - 1),$$

Where,

$$X = Z_{\alpha/2}^2 * p * (1-p) / MOE^2,$$

And $Z_{\alpha/2}$ is the critical value of the Normal distribution at $\alpha/2$ (that is, for a confidence level of 95%, α is 0.05 and the critical value is 1.96),

MOE is the margin of error, p is the sample proportion, and N is the population size.

Finite Population Correction has been applied to the sample size formula.

The sample size therefore included 100 respondents, comprising of 50 males and 50 females. Sampling error was calculated as follows (Rumsey, 2015);

$$z * \sqrt{\frac{\hat{p}(1-\hat{p})}{n}},$$

Where;

\hat{p} is the sample proportion,

n is the sample size

z^* is the appropriate z^* value for the desired level of confidence

3.5 Data Collection Instruments

A sample survey was used; the sample was selected to be the representative of the target population and for the generation of summary statistics. The survey research method was used where, respondents answered questions administered through questionnaires, and the responses given described and analyzed by the researcher. The questionnaires mainly targeted the affected local community at Mui Basin. In addition to open ended questions, closed-ended questions were included in the questionnaires, specifically, for ease of statistical analysis.

3.5.1 Data Analysis Techniques

Data analysis was aimed at answering the research questions put forward in this study. The data collected from the questionnaires was analyzed using the software Statistical Package for Social Sciences. The analysis of the data gave an overview of the data that was collected and the overall situation on the ground. The data was given a descriptive account of what was said in the field, as well as a statistical breakdown to reveal relationships, patterns or trends which were presented as tables.

3.5.2 Piloting the Research Instruments

Piloting of the research instruments was an important step taken in the study, to ensure that questions were understood by the respondents and that the wordings and measurements were appropriate and practical. A sample of community targeted questions were shared for feedback by a CSO working in Kitui with immense experience working to enhance the rights of communities in the Mui Coal Basin area.

3.5.3 Validity of the Instruments

Content validity can be viewed as the general concept that refers to the adequacy with which a test samples the scope that the test is claimed to cover (Fitzpatrick, 1983). Cronbach (1971) defines validity as examining whether the tasks used in collecting data are truly representative of the specified universe in the research study. The view of a research expert was sought on the validity of the research instrument to obtain relevant information.

3.5.4 Reliability of the Instruments

Reliability measures the degree to which a measurement technique can be depended upon to secure consistent results upon repeated application (Weiner, 2007). To measure the internal consistency split-half reliability test was applied. Split-half reliability was done through “splitting in half” all items of the questions on the interview templates that are intended to probe the same area of knowledge in order to form two “sets” of items; Interview template A and B. The entire test was then administered to a group of individuals, with a respondent receiving either form A or B. The total score for each “set” was computed, and the split-half reliability was obtained by determining the correlation between the two total “set” scores (Phelan & Wren, 2005).

Split half reliability was calculated using the Guttman Formula proposed by Guttman (1945), since the variances of the two halves were not equal.

Guttman Formula;

$$r_n = 2[1 - (SD_d^2) / SD_x^2]$$

r_n = Reliability of the test

SD_d = SD of difference of the scores

SD_x = SD of scores of the whole test

Reliability was therefore expressed as a correlation coefficient of 0 to +1. The reliability coefficient expressed the relationship between error variance, true variance and the observed score, the higher the reliability coefficient, the lower the error variance. Hence, the higher the coefficient the more reliable the tool. A value of more than 0.70 or higher was used to show reliability of the instrument.

3.6 Ethical Considerations

The primary responsibilities that was considered in this study was that consent is obtained from all respondents before they were interviewed; all respondents were protected from harm and confidentiality was assured for all respondents. Consent was

obtained from respondents through making them fully understand what they were being asked to do and that they were informed of consequences of such participation (Polonsky & Waller, 2011). To prevent possible harm that may have occurred during interviews, an information sheet was handed to the respondents, stipulating why the research study was being conducted and how it was commissioned. Confidentiality was also maintained during the process, whereby the study did not expose or indicate the identity of the respondents participating in the research.

3.7 Operational Definition of Variables

Table 3.1: Operationalization of Variables

Objective	Variable	Indicators	Measurement	Scale	Data Collection Tool	Data Analysis
	Dependent Variable Community Development	Increase in standard of living	1=yes 0=No	Nominal		
To examine whether employment is a determinant of community development	Independent Variable Employment	Community members employed in the mines	1=yes 0=No	Nominal	Questionnaire	Correlation
		Community members in top ranking positions	9 to 1 scale where 9 corresponds to the topmost management level (Template A)	Ordinal	Questionnaire	Correlation
To establish whether the availability of social amenities is a determinant of community development	Independent Variable Social Amenities	Available social amenities Change in lifestyle	1=Yes 0=No	Nominal	Questionnaire	Correlation

<p>To establish whether the availability of social amenities as a determinant of community development</p>	<p>Independent Variable Pollution</p>	<p>Complaints by community members of pollution Community members affected by pollution</p>	<p>1=Yes 0=No</p>	<p>Nominal</p>	<p>Questionnaire</p>	<p>Correlation</p>
<p>To establish if enactment of government regulations is a determinant of community development</p>	<p>Independent Variable Government Regulations</p>	<p>How government regulations are determinants of community development</p>	<p>1=Yes 0=No</p>	<p>Nominal</p>	<p>Questionnaire</p>	<p>Correlation</p>

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter reports the findings of the study which were collected through questionnaires. After data collection, the researcher edited, classified and coded data according to responses made in the questionnaires. Responses to open-ended questions were analyzed through content analysis and presented using descriptive narratives. For quantitative data, descriptive statistics were used and findings presented using frequency distribution tables. For ease of this process, a computer program, the Statistical Package for Social Sciences (SPSS), Version 22, was used. The findings are presented on the basis of themes derived from research objectives. Additionally, in this chapter, inferential statistics (correlation) was used to show the strength of each variable under study in influencing community development in extractive projects.

4.2 Response Rate

Table 4.1: Response Rate

Category	Sample	Return Rate	Percentage (%)
Men	50	50	50.0
Women	50	50	50.0
Total	100	100	100

From Table 4.1, it is clear that this study targeted a sample size of 100 respondents; 50 men and 50 women. All the targeted respondents were reached and interviewed which represented a 100% response rate. The response rate obtained was valid to draw conclusions from; the response rate was above the recommended 80% for descriptive survey studies (Mugenda & Mugenda, 2003). The high response rate was attributed to the fact that the researcher introduced herself to the various respondents, established a rapport and assured the respondents that the findings of the study were to be treated with utmost confidentiality and for academic purposes only. Additionally, the researcher personally administered the interviews to the respondents.

4.3 Demographic Information

The study sought to find out the demographic information of the respondents which included gender, location and block.

4.3.1 Gender of Respondents

Table 4.2: Gender of Respondents

Gender	Frequency	Percentage (%)
Male	50	50
Female	50	50
Total	100	100

The gender distribution of the respondents was sought in order to establish if there were any gender parities during data collection in relation to the targeted sample size of 100 respondents; 50 men, 50 women. The findings in Table 4.2 indicate that each gender, male (50%) and female (50%), was well represented in the sample used for data collection. However, the findings of this study do not imply that gender parity is equally distributed among the residents of Mui Basin, Kitui County. The findings were interpreted to mean that the sample was rich enough to draw valid inferences from both genders on the determinants of community development in extractive projects within the target region.

4.3.2 Distribution of Respondents According to Location

The findings in Table 4.3 shows that majority (29%) of the respondents were from Mutito, 24% from Mui, 11% from Kalitini, 8% from Enziu and Mathuki respectively, 7% from Endui, 6% from Kasunguni, 4% from Katini and 3% from other unidentified location. The findings indicate the distribution of the population in Mui Basin, Kitui County. Mui had the highest population in the Basin. Hence, the sample was well distributed showing representativeness of the target population, thus, validating generalization of the findings. Jackson (2009) states that for external validity of findings in descriptive research, appropriate and representative samples should be selected for results to be generalized to the population.

Table 4.3: Respondents' Location Distribution

Location	Frequency	Percentage (%)
Endui	7	7.0
Enziu	8	8.0
Kalitini	11	11.0
Kasunguni	6	6.0
Katini	4	4.0
Mathuki	8	8.0
Mui	24	24.0
Mutito	29	29.0
Other	3	3.0
Total	100	100

4.3.3 Distribution of Respondents According to Blocks

The study sorts the respondents' distribution in terms of Blocks forming Mui Basin in Kitui County, in order to ascertain further the representativeness of the sample of study for validity purposes. From the study findings portrayed in Table 4.4, Block B had 30% and C had 28% of the total number of respondents, D had 21%, A 18%, and 2% was for the unknown Blocks. The findings indicate the distribution of the population in Mui Basin in terms of Blocks. The findings imply that Block B and C were highly inhabited during the time of research. Disparities in the distribution indicated representativeness of sample to the population, thus, validating generalization. The sample was a true reflection of the population in terms of habitation.

Table 4.4: Distribution of Respondents According to Blocks

Blocks	Frequency	Percentage (%)
A	18	18.0
B	30	30.0
C	28	28.0
D	21	21.0
Unknown	2	2.0
Total	100	100.0

4.4 Employment as a Determinant of Community Development

This study sought to establish whether employment is a determinant of community development in Mui Basin Kitui. In this section, respondents were required to state and explain if they foresee a change in the employment situation in the community since the beginning of the mining project. They were also required to report on the kind of employment they envision most community members getting in the mining project. Other aspects reported in this section includes the changes encountered as a result of establishment of social amenities in the community and the future perceived long-term impacts on the development of the community as a result of the mining project.

4.4.1 Changes in the Employment Situation in Mui Basin Kitui

Table 4.5: Changes in the Employment Situation in Mui Basin Kitui

Response	Frequency	Percentage (%)
Yes	43	43.0
No	57	57.0
Total	100	100

Table 4.5 indicates that more than half (57%) of the respondents were of the opinion that mining as an extraction project at Mui Basin Coal Mines in Kitui will not bring changes in the employment situation in the community. On the other hand, 43% said that they anticipated job creation. Respondents who said No to the mining project bringing in community development explained by stating that there would be massive relocation and displacement of the local residents as a result of the project which curtailed their engagement in employment opportunities in the coal mines. The finding was in line with Omolo (2014) that as much as an extractive project comes with employment opportunities to the local community, the jobs may not end up being beneficial to the communities. They end up getting a raw deal since they do not often clinch management or director positions which are often left to expatriates.

Compensation of their lands was still not settled, they were not sure of what the compensation processes within the project entailed, there was also minimal awareness

and information for the locals about the extraction project which hindered their participation. The findings indicate a violation to some extent of Kenya’s Mining Bill (2014) which stipulates that the holder of a mineral right shall submit a detailed programme for the recruitment and training of citizens of Kenya, to ensure skills transfer and capacity building for the citizens.

On the other hand, respondents who stated that there would be community development (43%) in terms of employment mentioned that they anticipated massive provision of casual labour for the local residents in positions such as welders at 32.6%, plumbers 27.9%, electricians 23.3% and crane operators 16.2%, as shown in Table 4.6. However, they exclaimed that most probably managerial jobs would be allocated to expatriates or from persons outside of the local community. This finding highlighted the importance of extractive projects investment in the economies of the local communities surrounding the areas of operation. In a study, Cademartori (2002) similarly found out that extraction companies constantly fly in expatriates to work in their establishments and import raw materials, goods and services from overseas.

Table 4.6: Category of Employment for Residents at Mui Basin Coal Mines in Kitui

Response	Frequency	Percentage (%)
Welders	14	14.0
Plumbers	12	12.0
Electricians	10	10.0
Crane operators	7	7.0
Unemployment	41	41.0
Others	16	16.0
Total	100	100

There was also the sharing of the information about the project in community *Barazas* or meetings which enlightened the local residents. Compensation for the displacement and resettlement of the community was cited as a benefit beside employment. Additionally, there was a lot of learning for the residents and the respondents considered the knowledge

acquired as development. The findings indicate that, the local residents of Mui Basin benefited in other aspects such as knowledge sharing and enlightenment. The finding was in agreement with Wall and Pelon (2011) that the benefits from extractive projects should not just be limited to compensation for damages but should also contribute positively to the lives of affected communities.

4.5 Establishment of Social Amenities as a Determinant of Community Development

This study sought to establish whether the availability of social amenities would be a determinant of community development at Mui Basin Coal Mines in Kitui. The reported aspects in this section includes the changes expected to be encountered as a result of establishment of social amenities in the community and the future perceived long-term impacts on the development of the community as a result of the mining project.

Table 4.7: Establishment of Social Amenities in the Community

Response	Frequency	Percentage (%)
Yes	39	39.0
No	61	61.0
Total	100	100

The findings in table 4.7 indicate that more than three fifths (61%) of the residents felt that Mui Basin Coal Mines in Kitui would have no positive impact to the establishment of social amenities in the area as a form of community development. The respondents cited explanations such as, there would be no new amenities established as the existing ones would be demolished or transferred to pave way for the project, and residents were relocated to new areas, the residents reported that they were in dire need of water, good schools and hospitals, the initiative would affect the nearby schools and churches due to displacement, and the existing schools and hospitals would be highly affected due to noise and air pollution.

The above finding highlights some of the adverse impacts the local residents at Mui Basin Coal Mines feel that they will face in their social life including displacement of populations and disruption of life. This was attributed to the arrival of expatriates which

would lead to increased competition for local resources, such as land, especially, when the extractive project competed with other uses of land such as farming and tourism. The social lives of the indigenous inhabitants would therefore be highly affected after displacement and families were separated, for they looked at their land as their source of living and the core of their collective identity and spirituality. The findings found facts in Leonardo and Claudine (2012) observation that policies on extractive projects rarely address the issues regarding the social impacts such projects have on a community and whether affected communities deserve remuneration on the same.

On the other hand, 39% of the respondents said that Mui Basin Coal Mines in Kitui would have a positive impact in the establishment of social amenities in the area as a form of community development. The respondents cited improved infrastructure such as roads surrounding the mining area, electricity connection for the nearby locals, improved skills in land reclamation through teachings for the locals, and that health benefits for the community would increase. However, there was the replacement, displacement and destruction of existing social amenities to pave way for the land to be used in extraction which would break family ties of many of the residents and contributed to loss of culture and ethnicity due to resettlement in foreign areas. The finding was supported by the case observed by Koyi (2012) regarding the Gold Fields promoting the increased role of the private sector in development, a gold mining company in South Africa, which spent nearly 1.1 million Rands in 2002 upgrading a school for the Madombisha community in Limpopo province. Six extra classrooms, a laboratory and a library were built. An example of best practise of TNCs in the extractive sector involvement in provision of social amenities to surrounding communities.

Further, the researcher asked the respondents to state and explain the foreseen long-term impacts on the development of the community as a result of the coal mining project at Mui Basin Kitui. The results were as portayed in Table 4.8.

Table 4.8: Presence of Foreseen Future Long-Term Impacts on Development

Response	Frequency	Percentage (%)
Yes	47	47.0
No	53	53.0
Total	100	100

From the analysis of the results in Table 4.8, more than half (53%) of the respondents said that the extraction project at Mui Basin Coal Mines in Kitui will have no positive long-term impact on development of the region. The respondents explained by stating that the project will bring adverse effects on the existing social amenities in the region such as demolishing, end of nearby schools, environmental degradation, the community will be scattered as a result of resettlement, and social disturbance due to displacements. Additionally, the respondents cited negative effects such as erosion of culture after relocation, destruction of communal land, separation of clans, loss of people's source of livelihood for those who depended on the farms, conflicts in compensation, health risks to the residents and casual labourers due to constant blasts and air pollution lack of sufficient information on the extractive project. The above finding and explanations implies that according to the residents of Mui Basin Kitui, the extraction project will bring no future long-term community development but massive problems.

Fears from the residents on the future long-term effects of Coal Mines at Mui Basin Kitui such as pro-longed health risks have been confirmed through studies in other regions from extraction projects. Nolen et al. (2014) found out that for coal mining, occupational health injuries and illnesses from extractive industry projects can be particularly costly; it causes extremely high occupational mortality due to issues like being exposed to dust, heat, toxins or even harmful gases. Similarly, Eister (2003) studied miners in Australia, North and South America and found prevalence in risks such as decreased life expectancy, increased frequency of cancer of the trachea, bronchus, long stomach and liver, increased frequency of malaria and dengue fever among other diseases.

Further, from Table 4.8, 47% of the respondents reported that the coal extraction project at Mui Basin would bring positive future impacts on community development. They cited

the occurrence of situations such as change of lifestyle and standard of living due to employment created for the residents, education and information on coal and land reclamation for the locals through *barazas*, better schools and hospitals in the region as funded by shares from the project allocated for social amenities, good infrastructure in terms of roads and rural electrification, and emergence of business hubs and centers that will eventually translate into towns through urbanization. The findings on foreseen future positive impacts of Coal Mines at Mui Basin Kitui are in line with Kretzmann and McKnight (1993) who defines community development as a planned effort to build assets that increase the capacity of residents to improve their quality of life. Improvement in the quality of life for a community living in the same place may translate to improving the physical infrastructure, or building on existing resources in the community.

4.6 Pollution as a Determinant of Community Development

This study sought to establish whether pollution was a determinant of community development at Mui Basin Coal Mines in Kitui. The reported aspects in this section includes stating whether there has been any form of pollution of the environment since the beginning of the mining project, the kind of environmental pollution the community is likely to experience and the impact on the development of the community. Table 10 summarizes the responses of the respondents.

Table 4.9: Presence of Environmental Pollution at Mui Basin Coal Mines

Response	Frequency	Percentage (%)
Yes	74	74.0
No	26	26.0
Total	100	100

Table 4.9 shows that a majority of 74% had the view that the Coal Mines project at Mui Basin in Kitui will cause environmental pollution. They cited situations such as negative environmental impacts from sulphur, poisoning and destruction of ecosystem, air pollution, and coal fumes. Additionally, there would be disruption of the water table through numerous blasts, water poisoning, dust from the mines causing disruption of the school learning process, and release of excess carbon II oxide (carbon dioxide) in the air

which causes climate change. Further, there would be destruction of community communion sites due to degradation, diseases through chemicals from the coal site and air and water pollution. The above findings agree with Jaakko, Stevens, Lahn and Lee (2013) observation that the local communities are vulnerable to the release of toxins into the air and water in extractive projects. That people who have lived, farmed, grazed their animals, fished and held areas sacred may be displaced to make room for machines, blasting and disposal of toxic waste.

Further, the findings are in line with those of a study in another Kenya extraction site where Mutie (2012) found instances of environmental degradation as a result of mining where there was pollution of the atmosphere and water ways of Greenstone Belt of Western Kenya by mercury which is used for amalgamating the alluvial gold in the area and the dust produced in the mining and processing of diatomite at Mariandusi in Gilgil. In their assessment of the Coal Mines at Mui Basin Kitui, Mui Basin Coal mines, Mathu and Davies (1996) warned of risks of facing adverse environmental impacts especially in the area of waste management. That chemical effects were likely to be experienced by the community around especially if there was no proper handling of the highly toxic waste. These chemicals, a result of the industrial operations or dumping refuse, include sulphur-dioxide, cyanide, arsenic and mercury vapor, which are hazards to the environment.

The respondents further stated that pollution at the mines will impact negatively on community development through constant environmental degradation, increase of social problems such as the outbreak of diseases that were never experienced prior to the start of the project such as lung diseases and cancer. The respondents concluded that the area will experience destruction of vegetation or tree cover to give room for the mines. The findings on Coal Mines in Mui Basin in Kenya implies an impending massive destruction of the ecosystem due to pollution unlike in Botswana where Jefferis (2009) found out that extraction projects are relatively free of environmental damage that is often attributed to mining industries.

4.7 Government Regulations as a Determinant of Community Development

This study sought to establish if the enactment of government regulations is a determinant of community development at Mui Basin Coal Mines in Kitui. The reported aspects in this section includes whether government adequately involves the community in the mining project processes and at what stage. Aspects also reported include the kind of information received by the community regarding the project and the overall change in the living standards of local residents since the mining project began. Table 4.10 summarizes the responses of the respondents.

Table 4.10: Involvement of Community by the Government in Mining Project

Response	Frequency	Percentage (%)
Yes	83	83.0
No	17	17.0
Total	100	100

Findings in Table 4.10 show that 83% of the respondents stated that the community was involved by the Kenyan Government in the processes of the extractive project at Mui Basin Coal Mines in Kitui. They explained that they were involved in planning through chief *Barazas*, community-based organizations (CBOs), non-governmental organizations (NGOs) and the church, that were used as platforms to educate the local residents on the benefits and the likely negative outcomes of the project. The findings affirm Wall and Pelon (2011) results that governments are increasingly under pressure to show positive impacts of mining projects from exploration to mine closure from local residents through interest groups. The findings also affirm the fulfilment of the recommendations of the Kenyan Mining Bill (2014) which states that where applicable, social responsibility to the local communities should be carried out and a CDA implemented.

Additionally, respondents expounded that community participation at Mui Basin Coal Mines in Kitui was mainly enacted through local civil societies such as Haki Madini Coalition, Kenya National Commission for Human Rights (KNCHR), the Catholic church, and Community leaders. Other avenues included NGOs such as Action Aid and

Caritas and Groots Kenya. Government institutions involved included the Ministry of Energy, Ministry of Environment and Resources and Ministry of Lands. Information relayed to the community by the above groups was on mining acts passed, coal discovery in the area, displacement and issuance of land title deeds, forming community committees on the coal mining project, and ownership of the minerals being that of government. However, most of the information received was from local Community Based Organisations, the Church and Non-Governmental Organizations, the community felt they needed more action by the government in regards to dissemination of information on the extractive project.

These findings confirm Wall and Pelon (2011) arguments that in the recent past, communities have begun exerting considerable pressure on extractive companies, which has resulted in increased commitment to more equitable benefits by the use of catalysts such as NGOs and other interest groups. Further, this study agrees with Levitus (2009) that indigenous local communities have the capacity to determine what development means to them. That in cases of benefit sharing, civil society groups working exclusively on the rights of such communities, advocate and lobby for the independence of communities to make decisions in that regard.

Regarding the anticipated overall change in the living standards since the mining project began, only 36% of the respondents who formed part of the local residents said yes. This information is portrayed in Table 4.11.

Table 4.11: Presence of Overall Change in the Living Standards

Response	Frequency	Percentage (%)
Yes	36	36.0
No	64	64.0
Total	100	100

The findings in Table 4.11 shows that as reported by 64% of the respondents, majority of the residents of Mui Basin in Kitui did not anticipate to experience tangible overall positive change in their living standards as a result of the mining project.

The minority who said yes cited a possible increase in social amenities in the community including schools and health centers. The community also appreciated the fact that the government had stepped up the process to ensure that the community members were allocated title deeds, which would aid in ensuring that they are compensated for loss of their land as a result of the mining project. On the other hand, those who envisioned no overall change in the living standards cited negative reasons such as, health risks posed, resettlement, loss of their culture through resettlement and relocation, and that environmental degradation and pollution would affect natural resources and sources of livelihood, for those who depended on land for agriculture.

This study agrees with the results of Stevens et al. (2013) that extractive companies' activities often have adverse impacts on the economic, environmental and social lives of the local communities in which they operate. This leads to conflict and tensions over a number of reasons including compensation for land rights and resettlement among other assets, local employment and financial benefits, environmental and health impacts or the undermining of traditional livelihoods. These conflicts intensify in situations where there is low institutional capacity, where weak legal and governance frameworks fail to protect the rights and interests of the affected communities.

4.8 Correlation Analysis of Determinants of Community Development

Pearson correlation was used to measure the level of influence between variables. Pearson correlation coefficients range from -1 to +1. Negative values indicate negative correlation and positive values indicates positive correlation where Pearson coefficient >0.3 indicates weak correlation and Pearson coefficient <0.5 indicates strong correlation.

Table 4.12: Correlation Coefficients of Determinants of Community Development

	Government regulations	Pollution	Social Amenities	Employment	Community Development
Government regulations	1				
Pollution	0.631	1			
Social Amenities	0.551	0.451	1		
Employment	0.611	0.391	0.413	1	
Community Development	0.511	0.524	0.614	0.713	1

Table 4.12 shows that employment has the strongest positive as a determinant of community development at Mui Basin Coal Mines in Kitui, with a Pearson correlation coefficient of 0.713. Additionally, establishment of social amenities, pollution, and government regulations followed in the order of influence with Pearson correlation coefficients of 0.614, 0.524 and 0.511 respectively. Therefore, Government regulations were the least in influence among the determinants of community development in extractive projects in this study. Hence, the correlation matrix implies that the independent variables: employment, establishment of social amenities, pollution, and government regulations, are very crucial determinants of community development in mining projects as shown by their strong and positive relationship with the dependent variable.

4.9 Summary

This chapter has analyzed and interpreted the findings of the study under the themes derived from research objectives including: employment; establishment of social amenities; pollution; and government regulations, as crucial determinants of community development in extractive projects.

In the final part, Pearson correlation was used to measure the level of influence between variables indicating that employment had the strongest positive as a determinant of community development at Mui Basin Coal Mines in Kitui. Government regulations were the least in influence among the determinants of community development in extraction projects in this study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is a synthesis of the entire study, and contains a summary of research findings, conclusions, recommendations and suggestions for further research. The summary of findings is presented on the basis of the research questions.

5.2 Summary of Findings

In particular, this study examined how employment, pollution, government regulations and social amenities as a result of extractive projects manifest in a community and contributes to their development. It targeted a sample size of 100 respondents; 40 men, 40 women, 10 boys and 10 girls and a perfect (100%) response rate was attained which accounted for male 50% and female 50%.

To what extent is employment a determinant of community development in extractive projects?

More than half of the respondents were of the opinion that mining as an extraction project at Mui Basin Coal Mines in Kitui had would not bring about changes in the employment situation in the community. Respondents who said No to the mining project bringing in community development explained that there would be massive relocation and displacement of the local residents as a result of the project which would subsequently curtail their engagement. Compensation of their lands was still not settled, they were not sure of the compensation processes, tension was high on possible displacements, and that there was less awareness and information for the locals about the extraction project which hindered their participation in self-employment initiatives.

On the other hand, respondents who stated that there would be community development in terms of employment opportunities mentioned that there would be massive provision of casual labour for the local residents in positions such as welders, plumbers, electricians and crane operators. However, they exclaimed that managerial jobs would mainly be allocated to expatriates who majority were not Kenyan or not from the local community.

There was also the sharing of the information about the project in community *Barazas* or meetings which enlightened the local residents. Compensation for displacement and resettlement was cited as a benefit beside employment. Additionally, there was a lot of learning for the residents and the respondents considered the knowledge acquired as development.

How does establishment of social amenities act as a determinant of community development in extractive projects?

More than three fifths of the residents felt that Mui Basin Coal Mines in Kitui would have no positive impact on the establishment of new social amenities in the area as a form of community development. The respondents explained that there would be no new amenities established as the existing ones would be demolished or transferred to pave way for the project, lowering their quality, residents would be relocated to new areas, the initiative would affect the nearby schools and churches due to displacement, and that the existing schools and hospitals would be highly affected due to air pollution.

On the other hand, there were respondents who said that Coal Mines in Kitui would have a positive impact on the establishment of social amenities in the area. The respondents cited improved infrastructure such as roads surrounding the mining area, electricity connection for the nearby locals, improved skills in land reclamation through teachings for the locals, and that health benefits would be increased. However, there was the replacement, displacement and destruction of existing social amenities to pave way for the extraction land which would contribute to breaking the family ties of many of the residents and also contribute to loss of culture and ethnicity.

More than half of the respondents said that the extraction project at Mui Basin in Kitui will have no positive long-term impact on the development of the region. The respondents explained by stating that the project will bring adverse effects on the existing social amenities in the region such as demolishing, end of nearby schools, environmental degradation, created, the community will be scattered through relocation and social disturbance due to displacements.

Additionally, the respondents cited negative effects such as erosion of culture due to relocation, destruction of communal land, separation of clans, loss of people's source of livelihood particularly for those who depended on the farms, conflicts in compensation, health risks to the residents and casual labourers due to constant blasts and air pollution, and lack of community participation in the project due to domination of the managerial and leadership positions by the expatriates.

Further, a substantial number of respondents reported that the project would bring positive future impacts on community development. They cited the occurrence of situations such as change of lifestyle and standard of living due to employment created for the residents, education and information on coal and land reclamation for the locals through *barazas*, better schools and hospitals in the region as funded by shares from the project allocated for social amenities and good infrastructure in terms of roads and rural electrification

How does the occurrence of pollution determine community development in extractive projects?

A majority of almost three-quarters had the view that the Coal Mines project at Mui Basin in Kitui would cause environmental pollution. They cited situations such as negative environmental impacts from sulphur poisoning and destruction of the ecosystem, air pollution, and that coal fumes would act as health hazards. Additionally, there would be disruption of the water table through water poisoning, dust from the mines which would pollute the air, and release of excess carbon II oxide (carbon dioxide) in the air which causes climate change. Further, there would be destruction of community communion sites due to land degradation, diseases through chemicals from the coal site, and increased mortality rates due to polluted air and other natural resources.

The respondents further stated that pollution at the mines would negatively impact community development through constant environmental degradation, increase of social problems such as the outbreak of diseases that were never experienced prior to the start of the project. The area would experience destruction of vegetation or tree cover to give room for the mines.

To what degree do government regulations determine community development in extractive projects?

More than four-fifths of the respondents stated that the community was involved by the Kenyan Government in Mui Basin Coal Mines in Kitui. They explained that they were involved in planning through chief *Barazas*, community-based organizations (CBOs), non-governmental organizations (NGOs) and the church, which were used as platforms to educate the local residents on the benefits and the likely negative outcomes of the project.

Similarly, respondents expounded that community participation was mainly through local civil society organizations such as Haki Madini Coalition, the Catholic Church, and community leaders. Other avenues included NGOs such as Action Aid, Caritas and Groots Kenya. Government institutions involved included the Ministry of Energy, Ministry of Environment and Resources, Ministry of Lands and the Kenya National Commission on Human Rights which is an independent Government entity. Information relayed to the community by the above groups was on Mining Coal Acts passed, coal discovery in the area, displacement and issuance of land title deeds, forming groups to benefit from the projects, and prospective benefits and negative outcomes of the mining process. Information received by the community from the Government was on environmental implications of coal mining, issuance of title deeds and sections of the Mining Act including that minerals belong to the Government.

Regarding the overall view of whether positive change in the living standards of the local residents will be experienced, slightly more than a third of the respondents said yes. Majority did not envision tangible overall positive change in their living standards as a result of the mining project. The minority who said yes cited that they would secure employment opportunities at the TNC and that compensation for their losses would help them to open their own businesses. On the other hand, those who saw no probable overall change in the living standards cited negative reasons such as, health risks posed, resettlement leading to loss of their culture and environmental degradation and pollution which would affect natural resources and source of livelihood, for those who depended on land for agriculture.

5.3 Discussion of Findings

The first objective sought to examine whether employment is a determinant of community development. Respondents who stated that there was community development in terms of employment opportunities mentioned that they expected provision of casual labour for the local residents in positions such as welders, plumbers, electricians and crane operators. However, they exclaimed that managerial jobs would mainly be allocated to expatriates majority of whom were not Kenyan or not from the local community. It was also found that employment was the most crucial determinant of community development in Mui Basin Coal Mines as shown by its strong and positive relationship with the dependent variable. The finding was in line with Omolo (2014) that as much as an extractive project comes with employment opportunities to the local community, the jobs may not end up being beneficial to the communities. They end up getting a raw deal since they are likely not to clinch management or director positions which are left to expatriates. In a study, Cademartori (2002) similarly found out that extraction companies constantly fly in expatriates to work in their establishments and import raw materials, goods and services from overseas.

Secondly, the study sought to establish whether the availability of social amenities was a determinant of community development. The study found out that Mui Coal Project had no positive impact on the establishment of new social amenities in the area as a form of community development. It also found out that the community feared that there would be no new amenities established as the existing ones would be demolished or transferred to pave way for construction of the extractive project infrastructure, residents would be relocated to new areas, the residents would still be in dire need of water, good schools and hospitals, the initiative would affect the nearby schools and churches due to displacement, and that the existing schools and hospitals would highly be affected due to noise and air pollution. The findings found facts in Leonardo and Claudine (2012) observation that policies on extractive projects rarely address issues regarding the social impacts such projects have on a community and whether affected communities deserve remuneration on the same. The finding was in contrast to the case observed by Koyi (2012) regarding the Gold Fields, a gold mining company in South Africa which spent

nearly 1.1 million Rands in 2002 upragading a school for the Madombisha community in Limpopo province.

Thirdly, the study examined pollution as a determinant of community development. Pollution was extremely evident as a result of Mui Coal Project. The local communities at Mui Basin reported that they would be vulnerable to the release of toxins into the air and water. Pollution at the mines would impact negatively on community development through constant environmental degradation, increase of social problems such as the outbreak of diseases that were never experienced prior to the start of the project such as lung diseases. The community further expressed that the area would experience destruction of vegetation or tree cover to give room for the mines. The findings agreed with Jaakko, Stevens, Lahn and Lee (2013) observation that the local communities are vulnerable to the release of toxins into the air and water in extractive projects. Further, the findings are in line with those of a study in a Kenyan extraction site where according to Mutie (2012) there was environmental degradation as a result of mining through the pollution of the atmosphere and water ways of Greenstone Bell in Western Kenya by mercury which is used for amalgamating alluvial gold in the area and the dust produced in the mining and processing of diatomite at Mariandusi in Gilgil. In their assessment of the Coal Mines at Mui Basin Kitui, Mui Basin Coal mines, Mathu and Davies (1996) warned of risks of facing adverse environmental impacts especially in the area of waste management.

Further and lastly, the study established if enactment of government regulations is a determinant of community development. Findings indicated that the Mui Basin community was engaged by the Kenyan Government in the Coal Mines of Kitui. They explained that they were involved in the planning phase of the project by the Government through Chief *Barazas*, the community was also engaged in the planning phase through platforms convened by CBOs, NGOs and the Church to educate the local residents on the benefits and the likely negative outcomes of the project. The findings affirm Wall and Pelon (2011) results that governments are increasingly under pressure to show positive impacts of mining projects from exploration to mine closure from local residents through interest groups.

The findings also affirm the fulfillment of the recommendations of the Kenyan Mining Bill (2014) which states that where applicable, social responsibility to the local communities should be carried out and a CDA implemented.

5.4 Conclusion

This study concludes that employment is the most crucial determinant of community development in Mui Basin as a result of Coal Mines project as shown by its strong and positive relationship with the dependent variable. Additionally, the project had no positive impact on the establishment of new social amenities in the area as a form of community development. Pollution was extremely evident as a result of the Project. Further, the study concludes that the Kenyan Government is increasingly under pressure to show positive impacts of the mining Project, from exploration to mine closure, from local residents of Mui Basin through interest groups. Evident also was the fulfillment of the recommendations of the Kenyan Mining Bill 2014 which states that where applicable, social responsibility to the local communities should be carried out and a CDA implemented.

5.4 Recommendations

The following are the recommendations resulting from this study:

1. The Kenyan Government through the National Environment Management Authority (NEMA) need to re-assess the social and environmental impact of Mui Basin Coal Mines and identify practical mitigation measures that need to be integrated into the project to curb immense pollution.
2. Transnational Mining Company needs more clearly-established obligations to adhere to Kenyan laws and regulations. The company need to go beyond voluntary arrangements for corporate social responsibility in extraction processes in Mui Basin. This is mainly because pollution is extremely evident at Mui Coal Project.
3. Kenya as a State should play the role of facilitator of investment at Mui Basin Coal Mines in Kitui, and as much be a regulator establishing laws and policies

that mitigate environment and social impacts or take advantage of the opportunity to develop social amenities such as schools and roads. The study found out that there were no new amenities established as the existing ones were demolished or transferred to pave way for the project lowering their quality.

5.5 Suggestions for Further Research

The findings of this study highlights some of the adverse impact the local residents at Mui Basin Coal Mines have faced in their social life include displacement of populations and disruption of life. This was attributed to the arrival of expatriates which led to increased competition for local resources, such as land, especially, when the extractive project competed with other uses of land such as farming and tourism. The social lives of the indigenous inhabitants were highly affected after displacement and families were separated, for they looked at their land as their source of living and the core of their collective identity and spirituality. It is under this backdrop that this study suggests that:

- (i) A study be carried out to establish the socio-economic impact of Mui Basin Coal Mines in Kitui on the local residents.
- (ii) A study be carried out to establish other determinants of community development at Mui Basin Coal Mines in Kitui.

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APPENDICES

APPENDIX I: TRANSMITTAL LETTER

University of Nairobi
College of Education and External Studies
School of Continuing and Distant Education
Department of Extra Mural Studies

TO WHOM IT MAY CONCERN

I hereby confirm that I am a Masters student at the University of Nairobi currently conducting a research on the topic “Determinants of community development in of extractive projects: A case of Mui Basin Coal Mines in Kitui” as partial requirement for the award of the degree of Master of Arts in Project Planning and Management.

This letter humbly requests for your participation as a respondent in answering questions asked from the interview template provided. The information provided shall remain confidential and will only be used for academic purposes.

Thank you in advance.

Yours faithfully,

June Rebecca Nyauchi

Reg. No: L50/69546/2013

**APPENDIX II: QUESTIONNAIRE TEMPLATES ON DETERMINANTS OF
COMMUNITY DEVELOPMENT IN EXTRACTIVE PROJECTS**

Questionnaire Template A

All responses will be treated as confidential.

Indicate your Gender: *Male*

Female

Location:

Block:

1. Has there been a change in the employment situation in the community since the mining project began?

Yes

No

If yes, please explain

2. What category of employment would community members benefit from?

Director

Manager

Supervisor

Tool Pusher

Plumber

Electrician

Crane operator

Casual

Rig Superintendent

3. Have there been any changes resulting from the establishment of social amenities in the community?

Yes

No

If yes, explain what changes the social amenities have brought in the community?

4. Do you foresee any long-term impacts on the development of the community as a result of the mining project?

Yes

No

5. Has there been any form of pollution of the environment since the beginning of the mining project?

Yes

No

(If yes answer 6 and 7)

6. Explain what kind of environmental pollution the community has experienced?

7. How has this impacted the development of the community?

8. Has the Government adequately involved the community in the mining project processes?

Yes

No

If yes, please explain at what stage of the project was the community?

9. Has the community received information regarding the mining project from other sources?

10. If yes, what information has the community received?

11. Has there been an overall change in your living standards since the mining project began?

Yes

No

If yes, Explain

Questionnaire Template B

All responses will be treated as confidential.

Indicate your Gender: *Male*

Female

Location: _____

Block: _____

1. Has the mining project brought about development in your community since it began?

Yes

No

If yes, please explain

2. What kind of employment positions do most community members get in the mining project?

Clerical

Subordinate

Managerial

3. Have there been any social amenities e.g. schools, hospitals that have been set up by the mining project?

Yes

No

(If yes answer No 5 and No 6)

4. Have there been any changes brought about by the establishment of the social amenities in your community?

Yes

No

6. List some of the changes that have occurred in the community?

7. Do you foresee any long-term impacts to the environment as a result of the mining project?

Yes

No

If yes, explain?

8. Do you know of any regulation(s) the government has put in place to assist the community to benefit from the mining project?

Yes

No

9. If yes, please state which regulation(s)?

10. Has the community been involved in the project processes?

Yes

No

If yes, how has the community been involved?

11. Has there been any overall difference in your living standards since the mining project began?

Yes

No

If Yes, explain
