INVESTIGATING EFFECTS OF ROAD INFRASTRUCTURE DEVELOPMENT ON THE COMMUNITIES OF KIIRA-KASANGATI MATUUGA ROAD PROJECT.

CASE STUDY: KIIRA -KASANGATI -MATUGGA ROAD PROJECT IN WAKISO DISTRICT.

A dissertation presented to

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Approval

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Submitted to the Directorate of Graduate Studies, Research and Enterprise

Dedication.

This Dissertation is dedicated to my husband, Mr. Musulo Fred, My parents Miss Kateega Robinah and Mr David Dhikusooka, my children, Babirye Precious, Nabirye Elimercy, Wakaisuka Elijah and my siblings for their overwhelming support in the completion of this project. Above all, I dedicate this project to the Almighty God.

Acknowledgement.

First and foremost, I give all glory and thanks to God the Father, the Son, and the Holy Spirit for His continuous provision, guidance, and grace. It is through His blessings of good health, a sound mind, and unwavering strength that I have been able to successfully complete this Master's degree journey. I remain deeply grateful and humbled by His presence throughout this academic pursuit.

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May God bless you abundantly and reward your efforts in all your endeavors.

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Acronyms and Abbreviations.
Here below are the main acronyms and abbreviations used in the thesis

UNRA- Uganda National Roads Authority.

UN- United Nations

SGD-Sustainable development goals

AfDB- African development bank

IFC- International Finance Cooperation

NRDMP- National Roads Development and Maintenance Program.

FGD-Focus Group Discussion

KII- Key Informant Interviews

GBV-Gender Based Violence.

EIA- Environmental Impact Assessment

EMP-Environmental Management Plan.

SME's- Small and Medium sized enterprise.

PCA- Principal Component Analysis.

PAPs- Project Affected Persons'

Abstract.
This study, titled "Investigating Effects of Road Infrastructure Development on the Communities of Kiira-Kasangati-Matugga Road Project **i**n Wakiso District," explores the multifaceted impacts of road infrastructure on local communities in Uganda. The Kiira-Kasangati-Matugga Road project, part of the country's broader national development strategy, was designed to improve connectivity, facilitate trade, and stimulate economic growth in the central region. However, despite these intentions, infrastructure projects often result in both positive and negative outcomes, particularly for communities located in the immediate project area.

The research specifically investigates the social, economic, and environmental effects of the road project on communities along Kiira-Kasangati-Matugga road project in Wakiso District, capturing perceptions and lived experiences before, during, and after construction**.** While infrastructure is generally expected to enhance access to services and improve livelihoods, it may also cause displacement, environmental degradation, social disruption, and unequal benefit distribution. Notably, there is a scarcity of empirical studies in Uganda that assess road projects across all phases of their lifecycle.

Employing a mixed-methods approach comprising surveys, interviews, and statistical analysis this study provides a comprehensive assessment of how road development has influenced community growth, socio-economic well-being, and environmental conditions in the project area. The findings highlight key challenges such as compensation delays, health concerns, food insecurity, and livelihood disruptions, alongside notable improvements in access, urbanization, and economic opportunity.

The study contributes to closing the knowledge gap by offering an integrated perspective on road infrastructure development across all stages of pre-construction, construction, and post-construction**.** The insights generated aim to inform more inclusive, sustainable, and community-centered planning for future road development projects in Uganda and similar settings.

CHAPTER ONE

1.0 Introduction

Uganda, like many countries in Sub-Saharan Africa, has set ambitious goals to foster economic development through infrastructure improvement, particularly in the transport sector. A key component of Uganda's sustainable development agenda is the development of an efficient road network to facilitate the transportation of goods and services, stimulate trade, and promote regional integration. The government's efforts are aligned with global Sustainable Development Goals (SDGs), especially Goal 9, which focuses on building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation (United Nations, 2015). Road infrastructure is seen as a vital driver for achieving these objectives, as it enhances connectivity, creates economic opportunities, and improves access to essential services (United Nations, 2015).

In the context of Uganda, one notable project is the Kiira-Kasangati Road, which is expected to significantly enhance the transportation network between Kiira, Kasangati and Matugga . However, as with any major infrastructure development, the road project has the potential to generate both positive and negative effects on the local communities. While the benefits of improved roads such as enhanced access to markets, increased mobility, and job creation are widely acknowledged, the negative consequences often receive less attention. These negative impacts can range from environmental degradation and loss of agricultural land to social displacement and changes in local economic activities. Despite these risks, road construction projects often proceed with a focus on economic growth and the broader benefits of improved infrastructure, sometimes overlooking the adverse effects on affected populations (African Development Bank, 2011).

Development partners, such as the African Development Bank (AfDB), the World Bank, and the International Finance Corporation (IFC), acknowledge the critical role infrastructure plays in driving growth in Africa. However, they also highlight the need to consider the potential negative environmental, social, and economic impacts of such projects (African Development Bank, 2011). For example, roads can lead to deforestation, disruption of local ecosystems, and the displacement of communities, which may undermine the long-term sustainability of economic growth (Forman and Alexander, 1998). The literature suggests that, while road development is widely seen as a catalyst for economic progress, the communities directly and indirectly affected by these projects often experience negative consequences that are not fully addressed in project planning and execution. (Forman & Alexander, 1998).

In Uganda, many times the communities impacted by road development remain silent about the effects of such projects due to the perception that infrastructure development is a national priority led by the government. However, this silence does not necessarily mean that the communities are unaffected; it may rather reflect a lack of platforms for expressing concerns or the overshadowing narrative of economic progress. The Kiira-Kasangati Matugga Road project presents an opportunity to critically examine how road infrastructure development affects communities in the project area, particularly in terms of social, economic and environment.

This study, therefore, seeks to assess the effects of the Kiira-Kasangati Matugga Road project on communities within the project area, using the case study approach. The research will explore both the positive and negative impacts on communities within the project area, including changes in employment, income levels, accessibility to social services, and environmental conditions. By critically analyzing these factors, the study aims to provide a

more comprehensive understanding of the consequences of road infrastructure development in Uganda, thus contributing to the wider discourse on sustainable development.

The first chapter of this study provides an overview of the background, a detailed problem statement, research objectives, and research questions. It also outlines the scope of the study, the justification for the research, and the conceptual framework that will guide the investigation.

1.1 Background of the study.

The overall mandate of construction of roads rests with UNRA. UNRA's mission is "to Efficiently Develop and Maintain a Safe and Sustainable National Road Network for the Economic Development of Uganda". In pursuit of its Mission, UNRA has the following Strategic Objectives: Ensure all year round safe and efficient movement of people and goods on the National Roads Network enhancing road safety through improved design and education of the users, Optimize the quality, timeliness and cost effectiveness of the road works interventions, Improve the Private Sector Participation in service delivery, and Use innovative and creative techniques and strategies to optimize the performance of the road system (Ministry of Works and Transport, 2019) (UNRA, 2020).

The Kira -Kasangati- Matugga road is part of the Outer Ring Road network to the North of Kampala city. It starts at Kira town roundabout running west wards crossing the Kampala-Gayaza Road at km 6+300 in Kasangati and ends at Matugga, where it joins the Kampala-Bbombo highway. It involves the upgrading of the existing road to tarmac road, improving connectivity and accessibility in the Kiira-Kasangati-Matugga communities with an aim of enhancing transportation, infrastructure, facilitate economic growth and improve the quality of life for residents along the route. (UNRA, 2020).

The first 1.0km is a single seal surface dressed section characterized with potholes and erosion on the sides leading to reduced road width and the last 14.6km is of gravel wearing course, between 5-6m wide. The project road passes through an area with a high population density and carries a high traffic volume. It crosses 7 swamps of approximately 1.55Km length in total and has a steeper vertical alignment in some sections from Km 6+300 to 15+600. (UNRA report 2020).

Table 1.1 showing Design Class and Proposed Dimensions for Typical Cross-section: Kiira-Kasangati-Matugga (16km)

Right of Way Width (m)	**Carriageway**			Shoulder Width (m)	Cycle Lane (m)	Pedestrian Walkway (m)	Greening Zone (m)
	Width (m)	Lane width(m)	No. of lanes				
30	7	3.5	2	2 x 1.5	2 x 2.0	2 x 2.0	2 x 2.4

The road project is located in Wakiso district, connecting Kiira,Kasangati and Matugga.The road passes through several populated areas including trading centres and residential neighbourhoods (Uganda Bureau of Statistics, 2020).

The Government of Uganda, represented by the Uganda National Roads Authority (UNRA), allocated funds to the National Roads Development and Maintenance Programme (NRDMP) and is utilizing part of these funds towards the implementation of the Design and Build Contract for Kyaliwajjala-Kira – Matugga road and Improvement of five 5 Junctions. The project is being undertaken as a Design & Build and is part of the Outer Ring Road network to the North of Kampala city (UNRA, 2020).

The project's design, land acquisition, and construction processes are being undertaken in a phased approach. The project team phased the construction works into sections, including the upgrade of Kasangati-Matugga. The road structure would require permanent land acquisition

beyond the existing right of way (ROW), leading to economic and physical displacement of people, property, and livelihoods (UNRA, 2020).

The Kasangati-Matugga road is located in the Buganda region, Wakiso district traversing through the town councils of Kasangati and Gombe. The road adjourns from Kasangati trading center along Gayaza on the left-hand side, moving in the eastern direction through Nangabo, Bamba, Mawule, and Kiti villages up to Matuga junction along the Gulu highway.

Table 1.2 Shows the Administrative Units of Kasangati-Matugga Road

District	Town Council	Parish	Village
Wakiso	Kasangati	Wampewo	Buyinja
		Gayaza	Kyankima
		Nangabo	Nangabo, Bamba
		Katade	Maule, Mayirikiti
		Watuba	Kiti A,B
	Gombe	Matugga	Kilwanira/Lwadda A&B,Kito B&B

The road is part of the Kampala Outer Beltway Project being constructed by the Government of Uganda to decongest traffic in Kampala City and the surrounding metropolitan area. The road is expected to improve traffic flow within and around Kampala and Wakiso districts by easing connection to the trunk roads, especially Kampala-Bombo and Kampala-Jinja Highways. The project will address the main economic objectives of the Government of Uganda, namely economic development and poverty eradication.

The Kyaliwanjara-Kira-Kasangati-Matugga Project comprises the following components: Kira-Kasangati-Matugga road is the main road link of approximately 16km; Kira-Kyaliwajjala Link, which is about 2km; The Najjera-Buwate Spur, which is about 5km; Junction

improvements for 4 no. offline junctions; On and Off Ramps at Najjera Overbridge; Half Diamond interchange at Namugongo Overbridge; Pedestrian crossings at Greenhill, Buwate, and Mpererwe, along Gayaza road; Kyaliwajjala Underpass (which has been changed to an overpass/bridge) and; Signalized online junctions at Kyaliwajjala, Kira, Kasangati, and Matugga. Kasangati-Matugga (10KMS-Project Phase approach)

The outskirts are characterized by homesteads with household members engaged in employment away from home; some practice subsistence farming, animal and poultry keeping on a small scale, and operation of washing bays, fish ponds, and roadside markets, especially in the low-lying areas of Nangabo. The kiosks mainly deal in fruits and vegetables. The outskirt villages include Nangabo, Bamba, Kitagobwa, and Maule. The major socioeconomic activities undertaken in the trading centers of the project road are informal businesses, including wholesale shops of hardware, home consumable goods, retail shops, welding, restaurants, a few offices, water selling points, roadside vendors, roadside markets, boda-boda, tax parks, sand and aggregate businesses, bars and sports betting among others. The major trading centers are Kasangati, Kiira, and Matugga town. The terrain of the road section is averagely flat, one factor determining the suitability of the linear settlement and better farming soils. The flat sections are found in Kitagobwa, Kiti, up to Matugga villages. The other sections have a raised terrain with average hills in Bamba, Maule, and low-lying areas of Nangabo and Buyinja villages. Subsistence agriculture with drainage channels to retain water is practiced, especially in pocket plots of land and wetlands for cultivating fruits and vegetables. Growing fruits and vegetables is mainly practiced by women who again harvest and sell them on the roadside markets.

Roads are one of the most important infrastructures that enable human movement and transportation of goods and services. Road construction has been one of the most significant factors that have shaped the modern society and made it more accessible and connected. The

construction and maintenance of roads have been an ongoing process since the ancient times and continue to evolve with the growing demands of modern society. Road construction and development has widely been discussed as a major factor for economic growth (United Nations, 2015).

1.3 Problem Statement

The Kiira-Kasangati-Matuuga Road project, part of Uganda's broader infrastructure development agenda, aims to enhance connectivity and economic growth in the central region. However, while road development is expected to bring significant benefits such as improved trade, access to services, and economic opportunities, it also poses potential long-term impacts for local communities. These challenges may include displacement, changes in social dynamics, environmental degradation, and unequal distribution of benefits. There is limited empirical research assessing the direct and indirect impacts of this particular road project on the communities it serves on all phases of project cycle. Therefore, this study seeks to examine the social, economic, and environmental effects of the Kiira-Kasangati-Matugga Road development on affected communities, focusing on both the positive and negative outcomes before, during and after road construction. Specifically, it aims to understand how the road's construction and subsequent increased connectivity have influenced community growth, livelihoods, and overall well-being**,** while also identifying potential risks and areas for improvement in future road development projects. The research covers both the pre-construction, construction and post-construction periods, assessing the immediate, short-term, and long-term effects of the road project on the community where the existing research assesses the pre-construction impacts rather than all the stages including the post construction period which may portray the long-term impacts. This research fills this gap by providing a comprehensive understanding of the full lifecycle of road projects, including the social, economic, and environmental consequences that emerge over time.

1.4 General research Objective

To determine the social, economic and environmental impacts of the Kiira-Kasangati-Matuuga road infrustructure development on the communities that are affected before, during and after road construction.

1.4.1 Research objectives

i. To find out both positive and negative effects of road construction to the communities before, during and affter construction.
ii. To make recommedations from lessons learnt for undertaking other road development projects.
iii. Understand how communities cope with the impacts of road infrustructure development.

1.5 Research questions

i. What are the effects the Kiira-Kasangati-Matugga road construction to the communities before, during and after construction?
ii. What recommendations are there for undertaking road development to minimize impacts?
iii. How do communities cope with road construction impacts before, during and after road construction?

1.6 Hypothesis.

Road infrastructure development along the Kiira-Kasangati-Matugga road corridor has a significant impact on the social, economic, and environmental well-being of affected communities.

1.6.1 Positive Hypothesis

The development of the Kiira-Kasangati-Matugga Road has significantly associated with the positive social, economic and environmental impacts in the affected communities.

1.6.2 Negative Impacts Hypothesis:

The development of the Kiira-Kasangati-Matugga Road project is significantly associated with negative social, economic and environmental impacts in the affected communities.

1.6.3 Null hypothesis

“There is no significant relationship between the development of the Kiira-Kasangati -Matugga Road project and economic, environment and social well-being of the affected communities.

1.7 Content scope

The research study addresses the effects associated with road development in communities affected by the road projects. The content scope addresses various dimensions of road infrastructure development, including both positive and negative impacts on the economic, environmental, and social well-being of the communities affected.

The specific areas that the research covers include analyzing how the road development has affected local businesses and market access especially for agricultural products, goods, and services, employment opportunities in relation to the road project including temporary construction jobs, as well as long-term opportunities that arise from improved infrastructure. Investigating whether the development of the road has led to an increase in property values in surrounding areas, contributing to economic growth in the region. Assessing how improved transportation infrastructure has affected the daily lives of the local population, including access to income generation activities and resources and assessing the negative impacts of the road construction, such as pollution (air, noise, and water), deforestation, soil erosion, and disruption to local ecosystems.

This study examined the social implications of road development, with particular attention to its effects on community cohesion, family dynamics, and traditional social structures. The scope of the research included both potential benefits and adverse consequences associated with these changes. The study investigated how road development influenced family structures and community bonds. This included assessing risks such as family disintegration, the weakening of traditional support systems, and tensions arising from increased migration. It also

addressed the emergence of social problems linked to road construction and the influx of new residents or workers. These issues included child abuse, rising school dropout rates, and incidents of gender-based violence. Population changes resulting from the road project were explored, focusing on how shifts in population density and migration patterns contributed to overcrowding, pressure on local infrastructure, and increased social stress within affected communities. The research further examined access to essential services and also assessed whether improved road access facilitated or hindered the community's ability to reach healthcare facilities, schools, and other vital public services. Transportation and mobility were also studied, particularly how the road development affected travel safety and efficiency, reduced travel times, and influenced mobility patterns among local residents. Gender-based impacts were a key focus, with attention given to how women and other vulnerable groups were affected by the road project. The study considered changes in gender roles, access to resources, and potential increase in gender-based violence. The study examined the effects of migration and population influx triggered by improved road infrastructure. It investigated challenges related to resource competition, housing, and the social integration of new arrivals into the host communities.

Focusing on these key areas, the research aims to provide a holistic understanding of how road infrastructure development, specifically the Kiira-Kasangati Matuuga Road project, influences the growth, stability, and well-being of local communities. This above ensures that the study captures a comprehensive range of factors that contribute to the understanding of road development's impacts on community growth and social change in the context of the Kiira-Kasangati-Matuuga Road project.

1.7.1 Geographical scope.

The geographical scope of this research will be focused on the villages in Wakiso district that have been directly affected by the Kiira- Kasangati -Matugga Road project. Wakiso, being a rapidly growing urban area, presents a unique setting where the road project impacts urban /peri urban areas with high population density. The specific geographical focus will be urban / peri urban areas affected by the construction and development of the road. The research will cover all stages of the pre-construction, construction, and post-construction periods, assessing the immediate, short-term, and long-term effects of the road project on the community.

1.7.2 Specific areas of focus

The research will look at how the urban population in the town center experiences changes, such as improved market access, business growth, and enhanced service delivery due to the road project. The specific geographic area of focus will be the directly affected villages along the Kiira-Kasangati Matuuga Road corridor. These villages are closest to the road and thus experience the most immediate impacts of the construction and subsequent development of the road. Narrowing the focus to Wakiso district and the villages most directly affected by the Kiira-Kasangati Matuuga Road project, the study will be able to draw detailed and relevant conclusions about the effects of road infrastructure development on communities.

1.7.3 Time Scope.

The time scope of this study covered the period from October 2024 to May 2025, aligning with the key phases of the Kiira–Kasangati–Matugga Road project. Specifically, the study focused on the pre-construction phase**,** the construction phase**,** and the post-construction phase. Examining all three phases within the timeframe, the research aimed to capture the evolving

social, economic and environmental impacts of the road project on the affected communities throughout its full development cycle.

1.8 Significance of the Study

This study is significant in understanding the complex effects of road construction, particularly the Kiira-Kasangati-Matuuga Road project on affected communities. It contributed valuable insights into both the positive and negative consequences of road development offering guidance for future infrastructure projects. By identification of these issues, the study aimed to support the creation of sustainable and community-friendly development strategies for future road projects.

Moreover, the findings are anticipated to help policy-makers, developers, and stakeholders plan and implement road projects that strike a balance between infrastructure needs and community welfare. This ensures that road projects maximize benefits, such as improved market access and job creation, while minimizing harmful effects. In addition, the study empowers local communities by fostering greater participation in the planning and execution of infrastructure projects, allowing their voices to be heard and ensuring that their needs are considered.

Academically, the research fills existing gaps in the literature on the economic, environmental, and social impacts of road development before, during and after construction, it will provide a benchmark for future road projects, contributing to the development of best practices that can be applied in similar contexts both in Uganda and beyond. Ultimately, this research will offer valuable lessons to improve the sustainability and inclusiveness of road infrastructure development.

1.9 Justification of the Study

This study is justified by the need to address the social, economic and environmental impacts of road infrastructure development, with a specific focus on the Kiira-Kasangati-Matugga Road project. Existing literature has primarily concentrated on the pre-construction phase of road projects, such as land acquisition and initial displacement, but has largely overlooked ongoing and long-term impacts that communities face after the road is completed. This research aimed to fill the gap by providing a comprehensive understanding of the full lifecycle of road projects, including the social, economic, and environmental consequences that emerge over time.

Although earlier research has highlighted positive impacts such as improved market access and economic growth (Smith, 2006) the study in addition focuses on exploring the negative consequences communities experience, including environmental degradation, social fragmentation, and cultural shifts (Jones et al, 2019). By examining these impacts, the research offers practical recommendations for developers and policymakers to address these issues effectively, ensuring that future projects can be more sustainable.

This study also aimed to investigate how road projects, like the Kiira-Kasangati Matugga Road can influence economic development and social dynamics in affected communities. While road infrastructure can stimulate economic growth by improving access to services and markets, it can also lead to challenges such as population influx and displacement. The study will explore how road development can support or hinder sustainable social and economic outcomes by providing insights and recommendations into how the challenges can be mitigated.

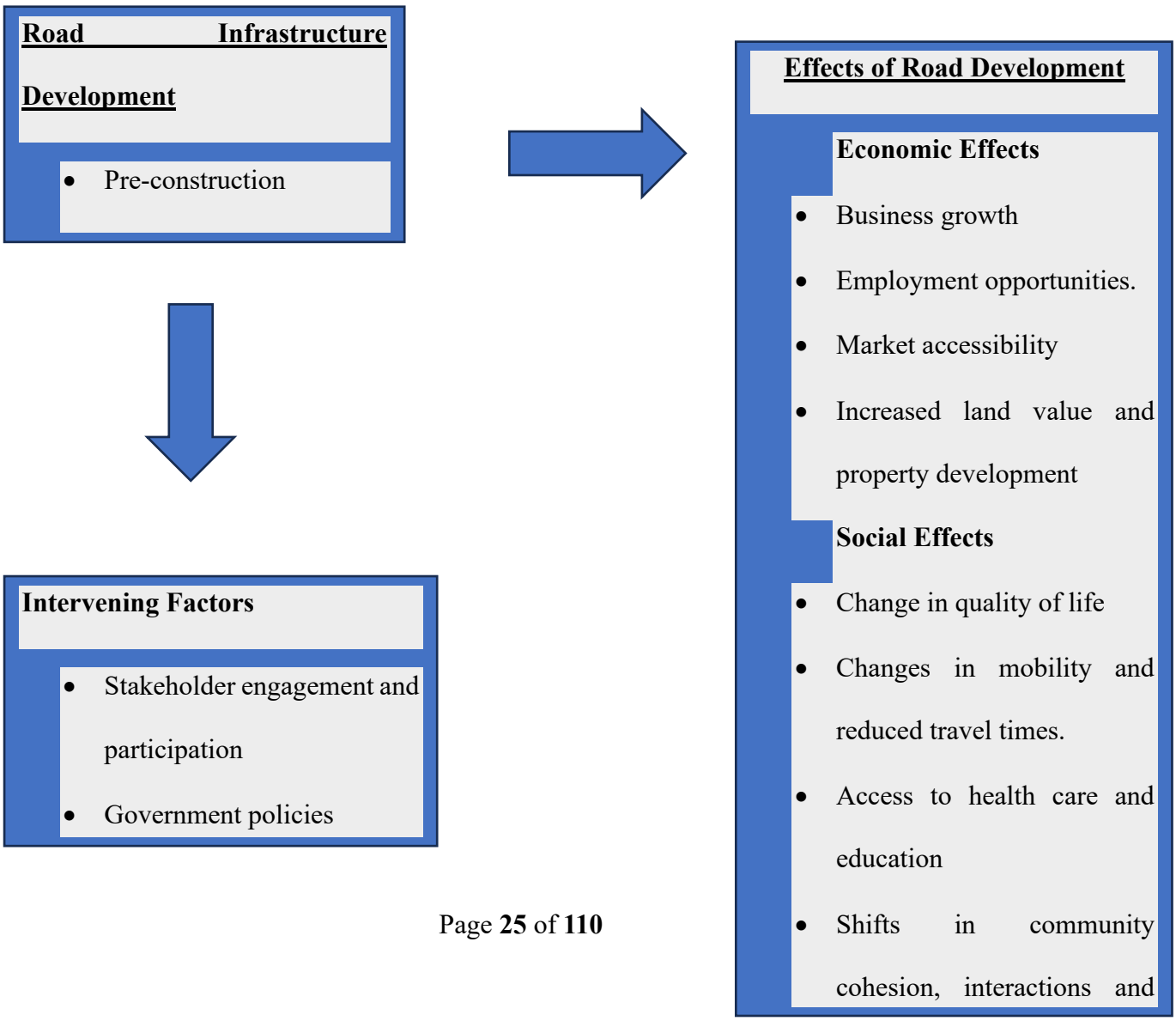
Additionally, the study provides insights into the long-term sustainability of road projects and their contribution to national growth. The findings will serve as a resource for local governments and road development agencies/ministries such as the Uganda National Roads Authority (UNRA) /Ministry of Works and Transport in integrating sustainability into future

infrastructure projects. This will contribute to the broader goal of achieving the United Nations Sustainable Development Goals (SDGs), particularly those related to sustainable cities, economic growth, and social inclusion.

Ultimately, the study's findings inform evidence-based policy-making which may help decision-makers understand the full range of impacts road development can have on communities. By offering practical solutions to mitigate the adverse effects of road construction, this research aims to create more sustainable and inclusive infrastructure projects in Uganda and other developing regions.

1.10 Conceptual Framework

Independent Variables. **Dependent Variables.**



The conceptual framework illustrates the relationship between the independent and dependent variables in the study on the effects of road infrastructure development on the communities of Kiira -Kasangati -Matugga road project. The independent variables represent the different stages of the road development which have a direct impact on the affected communities. The dependent variables are the outcomes of road development, which result from the interactions of the community with the various phases of road construction. These outcomes can be either positive or negative and affect the environment, social and economic development of the community.

CHAPTER TWO

2.0 Literature review

2.1 Theoretical frame work

This chapter explores existing literature on the effects of road infrastructure development, focusing particularly on the Kiira-Kasangati-Matugga Road project in Uganda. It synthesizes global and local perspectives, drawing on both theoretical insights and empirical findings, to critically assess how road projects impact economic, social, and environmental dimensions of development. The discussion aligns with the study's objectives and highlights key gaps that this research seeks to address.

2.1.1 Road infrastructure development and its effects.

Road infrastructure is widely recognized as a cornerstone of regional economic development. Scholars such as Banister, (2005) argues that improved road networks facilitate trade, enhance mobility, and connect producers to markets, eventually stimulating economic activity. In rural and peri-urban contexts, road development reduces geographic isolation and opens up new livelihood opportunities.

In Uganda, government institutions like the Uganda National Roads Authority (UNRA) underscore the transformative potential of road projects, especially for agricultural communities. Improved roads are associated with enhanced market access, increased income generation, and more efficient transportation. The Kiira-Kasangati-Matugga Road project exemplifies this focus, aimed at reducing congestion, improving social service accessibility, and stimulating local commerce in Wakiso District (UNRA, 2020).

Comparative studies from other Sub-Saharan contexts reveal both benefits and adverse consequences of road infrastructure. For instance, ASIRT (2014) researched on peri-urban areas in Kisumu (Kenya) and Accra (Ghana) illustrated how road projects can catalyze real

estate development, increase land prices, and improve service access. However, these improvements also tend to favor wealthier landowners, leading to gentrification and displacement of poorer residents. The socio-spatial reorganization brought about by such developments raises questions about equity and inclusivity in infrastructure planning.

In a more global analysis, (Schultz, 1975) employed a fixed-effects panel regression to study in 60 countries over three decades, showing a positive relationship between road infrastructure and economic growth. The study revealed an inverted U-shaped curve between road length per capita and GDP growth, indicating diminishing returns after a certain threshold. However, Schultz's focus remained largely macroeconomic, overlooking the micro-level effects and different construction phases of infrastructure development, which this current study intends to explore.

Similarly, extensive empirical work (Calderon & Serven, 2004); (Gibson, 2001) confirms that public investment in infrastructure correlates with poverty reduction and economic expansion. Despite some methodological refinement reducing earlier overestimations (Gramlich, 1994), the core argument persists that road infrastructure acts as a catalyst for development. However, the direction of causality remains complex and often cyclical growing economies demand better infrastructure, while underperforming regions invest in roads to stimulate progress.

Beyond economic implications, road infrastructure projects are increasingly scrutinized for their broader social and environmental impacts**.** While the economic growth narrative is dominant, the trade-offs involved especially for vulnerable groups are gaining attention for example, road expansion in peri-urban areas often leads to land-use changes**,** environmental degradation**,** and socio-cultural disruptions**,** yet many studies treat these as secondary concerns or do not address them at all.

Studies conducted by Calderon and Serven, (2004) confirm that infrastructure development correlates with poverty reduction. However, these findings often aggregate outcomes at national or regional levels**,** failing to differentiate how specific populations, such as peri-urban farmers, informal workers, or women**,** are uniquely affected. Moreover, they rarely explore how changes in land value or displacement impact long-term social integration, community ties, or gendered access to transport and economic opportunity**.**

Furthermore, while some studies such as (Schultz, 1975) adopt a longitudinal perspective, they still neglect temporal variation within the life cycle of a road project such as the disruption during construction versus the benefits during the post-construction phase. This temporal oversight creates an analytical blind spot where short-term harms are overlooked in favor of long-term economic gains.

Additionally, research on policy integration in road development remains limited, many studies argue for a mix of infrastructure and complementary socio-economic policies, but **f**ew offer concrete frameworks or evaluate existing policy coordination mechanisms in developing countries like Uganda. This lack of clarity makes it difficult to derive actionable policy recommendations tailored to context-specific realities**.**

2.1.2 Social disruption and demographic Shifts.

While infrastructure development is often seen as a catalyst for progress, it also introduces complex social challenges. Road development, including the Kiira-Kasangati-Matuuga project, has caused demographic shifts through increased migration and the influx of new populations seeking employment and investment opportunities. As (Donaldson & Hornbeck R, 2016) points out, such shifts may result in cultural erosion**,** conflict**, or** fragmentation**,** especially when long-standing communities are displaced or disrupted.

Evidence from Kisumu, Kenya, shows that bypass road construction disrupted existing businesses and housing in peri-urban communities like (Abunga cardayfiro-Schandorf et al, 2012). Rising property values encouraged gentrification, attracting wealthier groups and pushing low-income residents out. This phenomenon not only leads to spatial exclusion but also fractures social networks a loss often ignored in policy or compensation frameworks. Conversely, in Tom Mboya community, some residents benefited from increased land value through leasing or selling, showing that road impacts can be double-edged. These contrasting experiences underscore the need for localized, context-sensitive assessments that consider community specific outcomes rather than treating infrastructure impacts as universally beneficial.

2.1.3 Environmental impacts of road infrastructure

The environmental consequences of road projects are particularly acute in ecologically sensitive areas. Construction often results in deforestation, habitat loss, and water contamination (Gibson, 2001). In Uganda, the Kiira-Kasangati-Matugga Road project has raised concerns over the cutting of trees and fragmentation of agricultural land and wetlands. Although Environmental Impact Assessments (EIAs) are legally required, their effectiveness in influencing practice remains questionable, particularly in enforcement and post-construction monitoring (UNEP, 2005).

Comparative studies, such as those from the Brazilian Amazon and Namibia, reinforce the environmental burden posed by informal or unregulated road construction and increasing road transport emissions (Ministry of Environment and Tourism, 2008) Despite the existence of mitigation strategies like erosion control or wildlife corridors, implementation gaps persist due to institutional weaknesses or lack of political will.

The issue is not only whether EIAs are conducted but how rigorously they are implemented and how communities are involved in environmental governance. These are critical gaps this research intends to explore within the Ugandan context.

2.1.4 Social inequality, displacement and exclusion

Displacement caused by infrastructure projects leads to long-term socio-economic consequences when compensation is inadequate or when resettlement breaks up community ties (Cernea, 2000). In the Kiira-Kasangati-Matugga road project, despite official efforts at compensation, local reports (UNRA, 2020) and (Ministry of Works and Transport, 2019) note disruptions in livelihoods, child labor due to economic hardship, and increased gender-based violence, especially in areas where temporary labor was brought in.

(Satterthwaite, 2010) further argue that benefits of infrastructure tend to be unequally distributed, favouring those with capital or land ownership. This leads to spatial injustice as poor households are excluded from new opportunities while facing the brunt of negative consequences like land dispossession or rent hikes This also raises questions about governance, transparency, and the voice of vulnerable populations in decision-making processes. Very few studies have explored these power dynamics at the peri-urban level in Uganda, making it an area ripe for deeper inquiry.

Road infrastructure contributes to air and noise pollution, especially in areas with rising traffic volumes. (Nieuwenhuijsen et al., 2007) link long-term exposure to traffic-related pollutants to respiratory and cardiovascular diseases risks especially acute in densely populated or peri-urban zones with limited healthcare access. These health burdens are often understudied in African peri-urban settings**,** despite rising urbanization and traffic flows.

Additionally, increased traffic brings safety hazards, with rising road accident rates particularly affecting pedestrians, cyclists, and informal transport operator's groups usually excluded from road design considerations.

2.1.5 Social and economic inequality

While road infrastructure promises broader access and economic opportunity, studies by (Chen and Zhao, 2016) caution that it may worsen economic disparity. Infrastructure improvements often raise land values, pushing low-income groups and informal businesses to the edge. These processes mirror those described by Delang (2003), who documented how small-scale farming and rural economies are undermined by shifting land-use patterns.

Further, Smith (2006) and (Cernea, 2000) bring attention to cultural erosion and the destruction of heritage sites as overlooked consequences of infrastructure development. These impacts are especially concerning in regions like Uganda, where oral traditions, ancestral land use, and community cohesion form the fabric of rural life. However, few studies empirically assess how cultural change unfolds over time following road development, particularly from the lens of displaced or marginalized populations. This leaves an important gap in understanding the non-economic trade-offs of infrastructure expansion.

2.1.6 Spatial and regional development trade-offs

International studies, such as those by (Bird and Straub, 2020) highlight how road and rail networks reshape population distribution and industrial location. While these changes can improve overall welfare by creating more efficient economic geographies, they also cause imbalances, with core cities benefiting excessively.

(Chen & Zhao, 2016) add that intra-city transport tends to reduce informality in urban labour markets, whereas inter-city infrastructure drives long-term growth but mainly in already productive urban centres. This suggests that investment efficiency comes at the cost of regional equity.

In Uganda's context, such trends could mean that Wakiso and peri-urban districts serve as mere corridors to economic hubs like Kampala without capturing long-term benefits. Without targeted policies, road development could entrench spatial inequalities, rather than bridge them.

2.1.7 Environmental sustainability and biodiversity concerns

Environmental concerns remain critical despite policy frameworks for Environmental Impact Assessments (EIAs), enforcement is weak. The literature (Jones et al, 2019) repeatedly warns that roads lead to habitat fragmentation, threaten endemic species, and disrupt hydrological systems, particularly in ecologically sensitive regions such as forests and wetlands.

In the Ugandan context, little empirical evidence exists on post-construction environmental monitoring, nor how effective mitigation measures have been over time. There's also a governance gap in holding contractors and government agencies accountable for environmental compliance, which this study could help illuminate.

2.2 Empirical Literature

2.2.1 Positive Impacts of road infrastructure development

Empirical studies consistently highlight the positive role of road infrastructure in promoting economic and social development. Roads serve as critical enablers of connectivity, mobility, and market integration, particularly in developing countries.

Improved road infrastructure significantly enhances economic development by reducing transportation costs and travel time, which in turn boosts productivity and access to markets. (World Bank, 2009) emphasize that road development lowers transaction costs, facilitates trade, and opens new opportunities for business expansion. In Uganda, these outcomes are observable in projects such as the Kiira–Kasangati–Matugga Road, which has improved connectivity between Wakiso District and urban centres like Kampala.

The road projects have facilitated smoother traffic flow, reduced congestion, and improved access to commercial centers. According to the (World Bank, 2009) better connectivity through road infrastructure enhances economic integration between rural and urban areas, thereby contributing to agricultural productivity and increased market participation, in line with this, the Kiira–Kasangati–Matugga Road has improved access to Kampala's markets, benefiting local producers and traders by reducing transportation barriers.

(Schultz, 1975) noted that road development can act as a driver of economic transformation by linking rural areas to urban economies for example, easier access to commerce hubs, such as Kampala enables more efficient business transactions and better distribution of goods including agricultural produce, construction materials, and manufactured items.

Additionally, improved road infrastructure tends to attract investment and stimulate private-sector development. The Kiira–Kasangati–Matugga Road has created a favorable environment for small and medium-sized enterprises (SMEs) due to improved access to raw materials, suppliers, and consumers. The Uganda National Roads Authority (UNRA, 2024) observed that infrastructure projects of this scale are key drivers of poverty reduction and regional development.

A notable short-term benefit of the project has been the creation of employment opportunities during the construction phase. These jobs range from skilled labor, such as engineers and

technicians, to unskilled roles such as manual laborers and support service providers. (Calderon & Serven, 2004) argue that infrastructure projects can create significant employment opportunities and stimulate local economies.

Improvements in road infrastructure are also be linked to enhanced living standards as residents gain easier access to employment, social services, and trade, they experience increased income and social mobility. (World Bank, 2024) highlight that roads contribute to better access to healthcare, education, sanitation, and housing. The Kiira-Kasangati-Matugga road in particular has improved community access to these services, resulting in tangible quality of life improvements (UNRA, 2020).

2.2.2 Negative impacts of road infrastructure development

Despite the many benefits, road infrastructure projects can also bring about a range of negative impacts affecting the environment, social systems, and economic equity.

One major concern is the displacement of communities. The UNRA (2020) report noted that the Kiira-Kasangati-Matugga Road project resulted in the relocation of residents and businesses along the road corridor. Inadequate compensation and poor relocation processes may lead to social unrest and prolonged legal disputes. Cernea (2000) warned that displacement associated with infrastructure projects often causes loss of homes, livelihoods, and community cohesion.

Environmental degradation is another significant challenge. Tomba (2016) observed that infrastructure projects often contribute to habitat destruction, deforestation, and loss of biodiversity. Without adequate environmental safeguards, such developments can threaten ecological systems. Similarly, road construction can alter hydrological patterns and lead to increased erosion, water pollution, and air and noise pollution (Nieuwenhuijsen et al., 2007).

Socially, road projects may disrupt traditional lifestyles and cultural systems. Smith (2006) found that infrastructure development can destroy cultural heritage sites and displace

indigenous communities. The intrusion of external influences may erode traditional norms, languages, and identities. Cernea (2000) also noted the cultural risks posed by poorly managed road development, particularly in regions with high social or cultural sensitivity.

Economic inequality is another unintended consequence where (World Bank, 2024) explain that while infrastructure projects stimulate economic growth, they can also raise land prices and the cost of living, thereby marginalizing low-income households. These rising costs may push out small businesses and vulnerable groups who cannot compete in the transformed economic landscape.

Furthermore, road construction can alter local economies, especially in rural areas. Delang (2003) warned that small-scale farming and informal industries might suffer as land is repurposed or rendered inaccessible. This could result in job losses or reduced income for those dependent on traditional land-based activities. There is also the issue of urban displacement and decentralization. (Baum-Snow et al, 2017) studying Chinese cities, found that new roads led to the movement of populations and industries away from city centers, potentially weakening urban cores while creating new challenges in peripheral areas. Similarly, (Bird & Straub, 2020) found that in Brazil, road infrastructure led to population and income concentration in accessible urban centers, reinforcing regional disparities.

(Donaldson & Hornbeck R, 2016) in their study observed that delays in transport infrastructure disproportionately affected informal economies. In contrast, timely infrastructure delivery reduced informality and improved access to employment. This highlights the importance of timely and inclusive planning. (Chen and Zhao, 2016) demonstrated that while core cities gain long-term economic benefits from inter-city road investments, peripheral or rural regions often lag behind, worsening regional inequality. These findings underscore the importance of balanced infrastructure planning that includes both core and peripheral areas.

Finally, Jones et al (2019) emphasized the environmental risks of large-scale road development, particularly in ecologically sensitive regions. In countries like Indonesia, for example, rapid infrastructure expansion has led to habitat loss and biodiversity threats, calling for a careful balance between development and conservation.

2.2.3 Gaps in the literature.

Numerous studies have explored the socio-economic and environmental impacts of road infrastructure development across various contexts as discussed below:

2.2.3.1 Knowledge gap.

Most existing studies emphasize the macro-level economic benefits of road infrastructure but overlook the micro-level, community-specific outcomes, particularly in peri-urban Uganda. Discussion exists around the phased effects of road development on local communities, especially regarding social displacement and inequity access to benefits. Most literature emphasizes economic benefits but under-represents social fragmentation, gendered experiences, and informal sector disruption caused by infrastructure. There is also limited integration of cultural, health, and gendered perspectives in road infrastructure impact studies in Uganda.

2.2.3.2 Empirical gap

Few studies have directly examined the Kiira-Kasangati-Matugga Road project, or similar projects within Wakiso District, despite its significance. While studies from Kenya and Ghana offer comparable contexts, there’s insufficient empirical evidence from Uganda's peri-urban settings, which differ socio-economically and politically. There is Lack of localized, peri-urban evidence in Uganda particularly in communities around Kiira-Kasangati-Matugga despite comparative studies from Kenya and Ghana. There are few case-specific empirical studies in Uganda's peri-urban contexts like Wakiso, particularly related to post-construction effects**.**

2.2.3.3 Methodological gap

The reviewed literature relies on macroeconomic data and econometric models, lacking qualitative insights into the lived experiences of affected populations. There's a need for mixed-methods or participatory research designs that combine spatial analysis, economic indicators, environmental and social narratives to evaluate infrastructure impacts more holistically. There is dominance of quantitative studies hence very few use mixed methods that capture community voices and social narratives**.** Little attention is given to vulnerable groups for example women, informal settlers, children, migrants whose experiences with displacement, labor exploitation, or exclusion remain underexplored.

2.2.3.4 Population gap

Existing studies tend to generalize effects without disaggregating them by social class, gender, or land ownership status. The voices and perspectives of vulnerable populations, such as informal settlers or low-income peri-urban residents, are often missing from the literature.

2.2.3.5 Phase-based gap

Few studies analyse the different stages of infrastructure development (pre-construction, construction, post-construction) and their distinct socio-economic and environmental consequences. This is particularly relevant in rapidly urbanizing areas like Wakiso, where short-term disruptions (e.g., relocation, traffic, loss of access to land) may cause lasting damage to livelihood**s**.

2.2.3.6 Policy and governance gap

While scholars highlight the need for integrated development policies, there is scant analysis of how road projects are governed including transparency, public participation, and accountability mechanisms. There is little insight into how local governments or district planning authorities coordinate with national road agencies or donors, which affects both

implementation and community buy-in. There is weak focus on institutional accountability, coordination between national and local actors, and public participation in road development governance. There is also lack of studies on policy effectiveness, institutional accountability, and community participation in decision-making.

2.2.3.7 Equity and social inclusion gap

Many studies treat populations as homogeneous entities, ignoring how infrastructure affects people differently by gender, age, income, or occupation. Women's mobility needs such as safety concerns or access to informal markets are rarely addressed in impact assessments. There is also little work that integrates social justice or equity-focused frameworks into the evaluation of infrastructure development. Few studies integrate a social justice lens or evaluate how infrastructure reinforces or mitigates inequality, especially around land access, housing, or compensation.

2.2.3.8 Conclusion.

In summary, while the Kiira-Kasangati-Matuuga Road project is poised to offer substantial economic and connectivity gains, the distribution of these benefits remains uneven, and the social and environmental trade-offs are considerable. Previous studies provide a wealth of theoretical and global comparative insights, but there is limited Ugandan-specific, community-level empirical research, particularly on the multi-dimensional impacts across different population groups and the different development stages.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction.

This chapter outline the methodology that guided the study on the effects of road infrastructure development on community growth, with specific reference to the Kiira–Kasangati–Matugga Road project. It provided a detailed description of the research philosophy, research design, sample size and selection, sampling techniques and procedures, data collection methods, data collection instruments, pre-testing of research instruments, and data analysis techniques. The methodology was structured to ensure that the study was systematic, comprehensive, and reliable, addressing both qualitative and quantitative aspects of the research problem.

Adopting a mixed-methods approach, the study explored the direct and indirect effects of the Kiira-Kasangati-Matugga Road project on communities before, during, and after the construction. The combination of both qualitative and quantitative data collection methods allowed for a deeper understanding of the socio-economic and environmental impacts of road development.

The methodology also included the practical steps undertaken during the research process, starting from data collection involving community members and stakeholders to the analysis of the data, which addressed the research questions and tested the hypotheses. Each section of the methodology was designed to facilitate the collection of reliable, accurate, and meaningful data while ensuring that ethical considerations were fully addressed.

3.2 Research philosophy.

The research philosophy adopted reflects the underlying beliefs and assumptions about how knowledge is developed, interpreted and applied in the study, the choice of research philosophy was guided by the need to explore both measurable effects and personal experiences related to the Kiira-Kasangati-Matugga Road project. As such, the philosophy provided a foundation for the methodological decisions taken throughout the research process shaping the way data was

collected, analyzed, and interpreted to capture both objective trends and subjective perspectives within the affected communities.

3.2.1 Post-Positivism

Post-positivism formed a foundational aspect of this study where (Popper, 1959) post-positivism recognizes that while objective truths exist in the world, they are often imperfectly understood. Post-positivists believe that reality can be investigated through empirical observation and systematic inquiry, but they also acknowledge the limitations of human understanding and the potential for bias (Kuhn, 1962).

The researcher aligned with this worldview, accepting that there is an objective reality that can be studied through research and observation, but that all understanding is filtered through human subjectivity. This approach supported the collection of both quantitative and qualitative data, offering a holistic perspective on the study's context. By analysing numerical data from surveys alongside narrative data from interviews, the researcher aimed to provide objective evidence on how road infrastructure development influenced community growth, while also capturing the subjective meanings and lived experiences shared by community members (Creswell, 2014)

3.2.2 Interpretivism

In conjunction with post-positivism, the interpretivist philosophy was used to guide the qualitative components of the study. Interpretivism, as advanced by (Weber, 1979) and (Schultz, 1975) posits that knowledge is subjective and shaped by individual experiences and social contexts. Researchers adopting this paradigm believe that reality is socially constructed through human interactions, and that individuals may interpret the same phenomenon in different ways.

This philosophy was particularly useful for exploring community members' perceptions and personal experiences related to the road project through interviews and focus group discussions, the researcher was able to gain deeper insight into how individuals made sense of the changes brought about by the road development within their local environment. This philosophy supported the study of human behavior, perceptions, and social interactions, particularly in exploring complex, socially constructed realities such as the impacts of road infrastructure development on communities (Weber, 1979)

In the context of this research, interpretivism allowed for a deeper investigation into the experiences and perceptions of individuals directly affected by the Kiira-Kasangati-Matugga Road project through interviews and focus group discussions, the researcher gathered insights into how local community members interpreted the changes brought about by the road project in relation to their livelihoods, access to services, and social dynamics.

The inductive approach central to interpretivism also enabled the researcher to explore emerging themes and patterns, providing flexibility in understanding the multifaceted impacts of infrastructure development. This approach was particularly valuable in capturing the nuanced and context-specific effects that may not have been evident through quantitative methods alone.

3.2.3 Integration of post-positivism and interpretivism

Combining post-positivism and interpretivism, the study embraced a mixed-methods approach, which was well-suited for addressing the complexity of the research topic (Creswell, 2014) This combination allowed for the objective measurement of the effects of road development through quantitative data like surveys, while also providing the subjective depth of individual experiences and perspectives through qualitative data like interviews and focus groups. As (Noor T et al., 2022) noted, this dual approach helped to explain the research issues with both

breadth and depth, offering a richer and more comprehensive understanding of the research problem.

Moreover, the integration of these philosophical perspectives aligned with the view of (Enosh et al., 2014) who argued that using a mixed-methods approach enabled researchers to consider multiple perspectives on reality, thereby creating a more nuanced understanding of complex phenomena like road infrastructure development. This approach also enhanced the credibility and robustness of the findings by drawing on multiple sources of data, ensuring that both quantitative and qualitative insights contributed meaningfully to the overall conclusions of the study (Creswell, 2014).

Post-positivism and interpretivism guided the research in examining the effects of road infrastructure development on communities affected by the Kiira–Kasangati–Matugga Road project. These philosophies, combined with a mixed-methods approach, ensured that both the objective measurement of road development impacts and the subjective, lived experiences of individuals were effectively captured and analyzed. This led to a more holistic understanding of the social, economic, and environmental implications of road infrastructure development in the local context.

3.3 Research Design.

The study followed a descriptive research design which was appropriate for examining the effects of a specific intervention namely, the effects of Kiira–Kasangati–Matugga Road development on communities. Descriptive research aimed to systematically describe the characteristics of the population and the phenomena under study, thereby providing a comprehensive overview of the situation (Creswell, 2014).

A mixed-methods approach was adopted to allow for the integration of both qualitative and quantitative data. This combination enabled the researcher to capture the breadth and depth of

the road project's effects: qualitative data offered deeper insights into community experiences, while quantitative data provided measurable trends and patterns (Creswell, 2014).

The use of mixed methods facilitated triangulation, whereby findings from different methods were compared and combined to ensure a fuller and more reliable understanding of the road development's impacts. This approach ensured that both numerical data (quantitative) and lived experiences (qualitative) were incorporated into the final analysis, resulting in a well-rounded assessment of the project's impact on local communities.

Overall, this design allowed for a balanced and comprehensive investigation into the multiple dimensions of road infrastructure development's influence on community growth. It enabled detailed exploration of both the positive and negative outcomes associated with the Kiira–Kasangati–Matugga Road project.

3.4 Study population

The study population consisted of individuals directly and indirectly affected by the Kiira–Kasangati–Matugga Road project, as well as key stakeholders involved in the planning, implementation, and oversight of the project. A carefully selected group of participants ensured that diverse perspectives were captured, thereby providing a holistic understanding of the road development's impacts on local communities (Creswell, 2014).

3.4.1 Breakdown of the study population.

The study population comprised various categories of individuals who were either directly or indirectly affected by the Kiira–Kasangati–Matugga Road project, as well as stakeholders involved in its implementation and oversight. A total of sixty-four project-affected persons (PAPs) were selected, with 15 individuals chosen from each of the four sampled affected communities. These participants were residents or business owners who had experienced direct impacts from the road construction, such as displacement, changes in land use, or disruptions

to their daily lives and livelihoods. Their inclusion was intended to capture a diverse range of experiences and viewpoints from those most intimately affected by the project.

In addition to community members, the study included two town clerks drawn from the affected sub-counties. These local government officials provided essential administrative insights into the project's implementation and its implications for local governance. Five local leaders from different affected villages were also engaged in the study. As individuals deeply involved in community affairs, they offered important perspectives on the social and economic changes experienced within their constituencies as a result of the road development and 4 groups of FGD's were interviewed with a total number of twenty-four participants.

To gain a technical perspective on the infrastructure project, two engineers who were involved in the planning and construction phases of the road were consulted. Their contributions helped contextualize the construction process, technical challenges, and any mitigation measures taken to address community concerns. Additionally, one environmental specialist participated in the study, offering an assessment of the ecological effects of the road project, including environmental degradation such as deforestation, soil erosion, and changes in water quality.

The study also engaged one sociologist with experience working directly with the affected communities. This individual provided a deeper understanding of the project's social impact, particularly in relation to displacement, changes in community dynamics, and the broader well-being of local residents. Together, this diverse sample enabled the research to draw from a rich array of insights, ensuring a comprehensive and balanced analysis of the road project's effects on the affected communities.

3.4.2 Unit of analysis.

The unit of analysis in this study was the individual specifically, people living in the affected communities. These included residents, business owners, and other local stakeholders who

were directly impacted by the Kiira–Kasangati–Matugga Road project. Their lived experiences, attitudes, and perceptions were central to understanding the nature and extent of the road project's effects on community growth.

3.4.3 Unit of comparison.

The unit of comparison comprised leaders and personnel involved in the implementation and oversight of the road development project. This group included local leaders, Town clerks, engineers, environmentalists, and social workers. Comparing the perspectives of directly affected community members with those of institutional stakeholders helped identify potential gaps or alignments in perceptions of the project's outcomes, thereby assessing whether development goals were congruent with community needs.

3.4.4 Summary of Study Population.

The table below 3.1presents a summary of the study population categorized by type and number of participants:

Table 3.1 showing the summary of study population.

No of affected persons	FGDs	Town Clerks	Local leaders	Engineer	Valuer	Environmentalist	Sociologist	Total
64	24	2	5	2	1	1	1	100

3.5. Sampling size

Determining the appropriate sample size was a critical step in ensuring that the study's findings were both reliable and representative of the population. In this study, the sample size was guided by the total population of individuals affected by the Kiira-Kasangati-Matugga Road project. A systematic random sampling method was employed, allowing the selection of participants at regular intervals to ensure fair representation. This approach followed the

recommendations of (Krejcie & Morgan, 1970), who provide a standard framework for sample size determination.

Given that the road project spans a broad urban and peri-urban area, the affected population was assumed to be large, including residents, business owners, and other local stakeholders. As it was not feasible to reach every individual, a random sampling technique was used. This ensured each person had an equal chance of being selected, helping to reduce selection bias and improve representativeness (Cohen, 1988).

3.5.1 Approach to determining sample size (Krejcie & Morgan, 1970)

The determination of an appropriate sample size was a crucial aspect of this study to ensure that the findings were statistically valid and representative of the larger population affected by the Kiira-Kasangati-Matugga Road project. The population included residents, business owners, and other local stakeholders who were directly impacted by the road development. Given the urban context of the project area, the affected population was expected to be relatively large, making it impractical to include every individual in the study.

To address this, a probability sampling approach was adopted, specifically using systematic random sampling. This technique allowed for the selection of participants at regular intervals from the population list, thereby ensuring that each individual had an equal chance of being included. The use of systematic random sampling where, for instance, every fifth person was selected helped maintain representativeness and manageability in the data collection process. This method aligned with the recommendations of Cohen (1988) who emphasized the value of fairness and randomness in ensuring an unbiased sample.

The calculation of the sample size followed the approach (Krejcie and Morgan, 1970). This method is widely recognized for providing standardized sample sizes based on known population sizes and desired confidence levels. The researcher used Krejcie and Morgan (1970)

statistical table to determine the minimum number of participants required to achieve statistical significance. For example, for a population of approximately 1,000 individuals, the corresponding sample size, based on a 95% confidence level and a 5% margin of error, would be around 278 participants. This approach ensured that the sample drawn was sufficient to yield reliable and generalizable findings. Applying this systematic and statistically grounded method, the study was able to produce results that were both credible and reflective of the diverse experiences and perspectives within the affected communities.

3.5.2 Sample size for each group.

A total of 15 randomly selected project-affected individuals were chosen from each of the four targeted communities, ensuring diverse and representative voices. In addition, purposive sampling was used for key informants, including three town clerks, five local leaders, two engineers, one environmentalist, one sociologist and 24 participants for Focus group discussions. These individuals held specialized roles in the project and provided essential contextual and technical insights.

This sampling approach combining probability sampling for community members and purposive sampling for stakeholders allowed for a balanced and holistic understanding of the road project's impacts on community development

3.6 Sampling techniques

A mixed sampling technique was employed which included systematic random sampling and a probability-based approach that was used to select project-affected individuals, ensuring that every member of the population had an equal opportunity to be included (Noor T et al., 2022). For key stakeholders such as engineers, environmentalists, and local officials, purposive sampling was used based on their knowledge and involvement in the project. This combination of sampling techniques improved both the reliability and depth of the study.

3.7 Data collection methods (Kvale, 2007)

Following the mixed-methods framework, data collection included a variety of tools to capture both quantitative and qualitative data, as recommended by (Kvale, 2007).

Questionnaires were used to gather quantitative data from community members. The instrument included both closed and open-ended questions to allow for numerical analysis as well as open expression of experiences and perceptions.

Semi-structured interviews were conducted with selected key informants, including local leaders, engineers, and government officials. This method allowed for detailed, flexible conversations while maintaining consistency in the topics discussed.

Focus group discussions (FGDs) involved 6 participants per session. These discussions encouraged shared dialogue, allowing the researcher to explore group dynamics and collective views on the road development project (Krueger and Casey, 2015)

Observation was adopted as a supplementary tool where the researcher noted physical changes in the community, including alterations in land use, traffic flow, environmental conditions, and community infrastructure (Robson, 2011). This method provided contextual richness that supported and enhanced insights drawn from interviews and surveys.

3.8 Data processing, analysis, interpretation and presentation (Creswell, 2014).

The quantitative data collected through questionnaires were subjected to a rigorous process of cleaning and editing to correct for missing values, eliminate inconsistencies, and remove any irrelevant responses, following the procedures outlined by (Miles & Huberman, 1994). After cleaning, responses were systematically categorized and coded to facilitate data entry into the Statistical Package for the Social Sciences (SPSS) Version 26, as recommended by (Miles & Huberman, 1994)

Descriptive statistics such as frequencies, percentages, and means were applied to summarize demographic information and to identify general trends within the data. These summaries provided a foundational understanding of the characteristics and perceptions of the study participants.

In presenting the results, a combination of visual and narrative techniques was employed. Tables, charts, and graphs were used to convey descriptive and inferential statistics clearly and concisely. Frequency tables highlighted demographic patterns, while correlation matrices and regression outputs illustrated the interconnections among variables. At the same time, narrative summaries and direct quotations from interviewees were included to provide authenticity and to capture the human dimension of the research findings. This multifaceted approach to data processing, analysis, interpretation, and presentation ensured a comprehensive understanding of both the measurable and experiential impacts of road infrastructure development on the affected communities. By combining statistical rigor with qualitative depth, the study produced findings that were both credible and grounded in the realities of the local context.

3.8.1 Data analysis.

The first step in analyzing the data was to conduct descriptive statistics to summarize and describe the characteristics of the sample population. Frequency tables were used to present and interpret demographic characteristics, such as age, gender, education level, and occupation, presenting them using percentage values. This helped to provide a clear understanding of the composition of the respondents (Miles & Huberman, 1994).

The responses obtained in conducting research are usually related to the characteristics of the respondents. The relationships can be statistically tested using the Pearson's chi-square test for association/ independence or logistic regression. The Pearson's Chi-square test for association was adopted in this study because of the grouped independent variables (demographic

characteristics). This was used to make inferences about the relationship between several independent variables (socio-demographic characteristics) and the project impacts. Significant relationships were presented in the table and the relationship was considered significant at 5% ($\alpha = 0.05$). Responses were also presented descriptively as tables, graphs and pie charts.

Regression analysis was used to assess the predictability of the independent variables on the dependent variable; regression analysis was used to help quantify the influence of road development on the community growth indicators. The researcher also interpreted the results based on the Adjusted R^2, which indicates how well the regression model fits the data and the proportion of variation explained by the independent variables.

Mediating effect analysis was employed a Med Graph system was used to generate mediated graphs, which will help to test the mediating effect of variables such as community engagement or mitigation measures in the relationship between road infrastructure development and its effects on community growth. This will allow for a deeper understanding of how certain factors influence the impact of road development on the community.

3.8.2 Qualitative data analysis

Interview and FGD data were transcribed and analyzed using thematic analysis and **t**ranscripts were imported into Excel, and recurring themes were categorized according to emerging narratives (Creswell, 2014). Themes were aligned with quantitative findings to provide a richer, integrated interpretation of the results. Narrative insights were used to contextualize the statistical outcomes, adding human experience to the numeric trends.

3.9 Limitations.

While the study was carefully designed to ensure methodological rigor and validity, several limitations were acknowledged and anticipated throughout the research process. One key challenge was the reluctance of some respondents to disclose information they perceived as

sensitive especially in the Kasangati section like questions that involved their opinions about the road project or its administrators. This was handled by spending time in the community prior to data collection, moving with LC 1 chairpersons, engaging with affected people informally and explaining the academic nature of the study. This early rapport-building was intended to foster trust and openness among participants.

Another limitation stemmed from some individuals who were unwilling or hesitant to fill out questionnaires. In such cases, the researcher made deliberate efforts to communicate respectfully and clearly about the voluntary nature of the study, assuring participants of their right to withdraw at any stage without any negative consequences. By emphasizing the principles of free will and confidentiality, it was hoped that participants would feel more comfortable engaging with the research process.

Despite these limitations, the study remained committed to methodological soundness and ethical integrity. While it is acknowledged that no research can be entirely free from challenges, these limitations were managed through thoughtful strategies that aimed to preserve the reliability, validity, and practical value of the findings.

3.10. Ethical considerations

In conducting this study on the effects of road infrastructure development on communities along Kiira-Kasangati-Matugga Road corridor, ethical standards were rigorously observed to protect the rights, privacy, and well-being of all participants. As highlighted by (Saunders et al., 2009)ethical concerns typically arise throughout various stages of research from initial access to participants, through data collection and analysis, to the reporting of findings.

Participants were fully informed about the objectives of the study, the nature of their involvement, and the intended use of the data collected. Informed consent was obtained before

participation, and all individuals were made aware that they could withdraw from the study at any stage without facing any consequences or losing any benefits.

Anonymity and confidentiality were maintained throughout the research process, all data whether gathered through questionnaires, interviews, or focus group discussions was anonymized to prevent identification of individual respondents. The collected data was securely stored and accessible only to the researcher and designated personnel.

Care was taken to ensure that no psychological, emotional, or physical harm resulted from participation in the study. The questions used in data collection tools were carefully designed to be respectful and non-intrusive, sensitive questions were avoided unless absolutely necessary, and participants were free to decline to answer any question where any form of discomfort was observed or expressed and participants were offered the opportunity to discontinue their involvement without penalty.

The study also ensured that no participant was coerced into taking part of the study rather voluntary participation was emphasized during community sensitization and measures were taken to prevent exploitation, particularly of vulnerable individuals. Cultural sensitivity was observed at all times with the researcher showing respect for local norms, traditions, and values, especially during in-person interactions. Local languages and appropriate communication styles were used to promote understanding and comfort during data collection.

Data was reported honestly and objectively where the findings presented in this dissertation accurately reflected the data collected. There was no manipulation of information to suit any preconceived expectations, and all limitations and potential biases were acknowledged.

Lastly, the study was guided by a strong sense of social responsibility that aimed to produce not only academically valid findings but also insights that would be useful to the affected communities and key stakeholders. The results are to be shared with local authorities and

development partners with the hope that the findings would contribute to more informed and inclusive infrastructure planning in the future.

CHAPTER FOUR

4.0 FINGINGS AND ANALYSIS

4.1 Introduction.

This chapter presents, analyzes, and interprets the findings of the study based on the data collected from the respondents. It begins by outlining the response rate and the demographic characteristics of the participants, providing context for the interpretation of subsequent results. The chapter then presents the key findings related to the study objectives, followed by relevant statistical analyses including regression outputs where applicable. Finally, the chapter introduces a proposed framework informed by the findings, with detailed explanations supporting its development and relevance to the research problem.

4.2 Socio-demographic characteristics of the respondents.

This survey examined responses from a total of 64 respondents from Wakiso district in the villages of Kasangati, Kiiti A&B, Buyinja, Kyankima, Lwada A &B, Nangabo and Mattuga in Kiira town council. The majority of the respondents were males totaling to 39 (60.9%) while the rest were females. The largest proportions of respondents were individuals aged between years 55-64 making 29.9%, followed by those between 35-44 years, making 28.1%.

The largest proportion of respondents 38 were businessmen or traders, followed by farmers making 14.2% of the total respondents among others (Table 1). Majority of the respondents had at least attained secondary education while 26.6 percent of the respondents had completed primary education only.

Table 4.1: the socio-demographic attributes of the respondents in the study area.

	Frequency	Percent
Gender		
Female	25	39.1
Male	39	60.9
Total	**64**	**100.0**
Age		
35-44	18	28.1
45-54	15	23.1
55-64	19	29.9
65+	12	18.9
Total	**64**	**100**
Occupation		
Accountant	2	3.1
Business/Trade	38	60.4
Engineer	2	3.2
Farming	9	14.2
Medical clinical officer	1	1.5
Builder/ Metal fabricator	6	9.6
Teacher/ School proprietor	5	8
Total	**64**	**100**
Education level		
None	6	9.4
Primary	17	26.6
Secondary	19	29.7
Tertiary	9	14.1
University	13	20.4
Total	**64**	**100.0**

4.3 Assets ownership of respondents

The majority of the respondents revealed that they own multiple properties like land, residential and commercial buildings in the road construction project area while others have got at least one of the three items in additions to own business kiosks in the area (Figure 1).

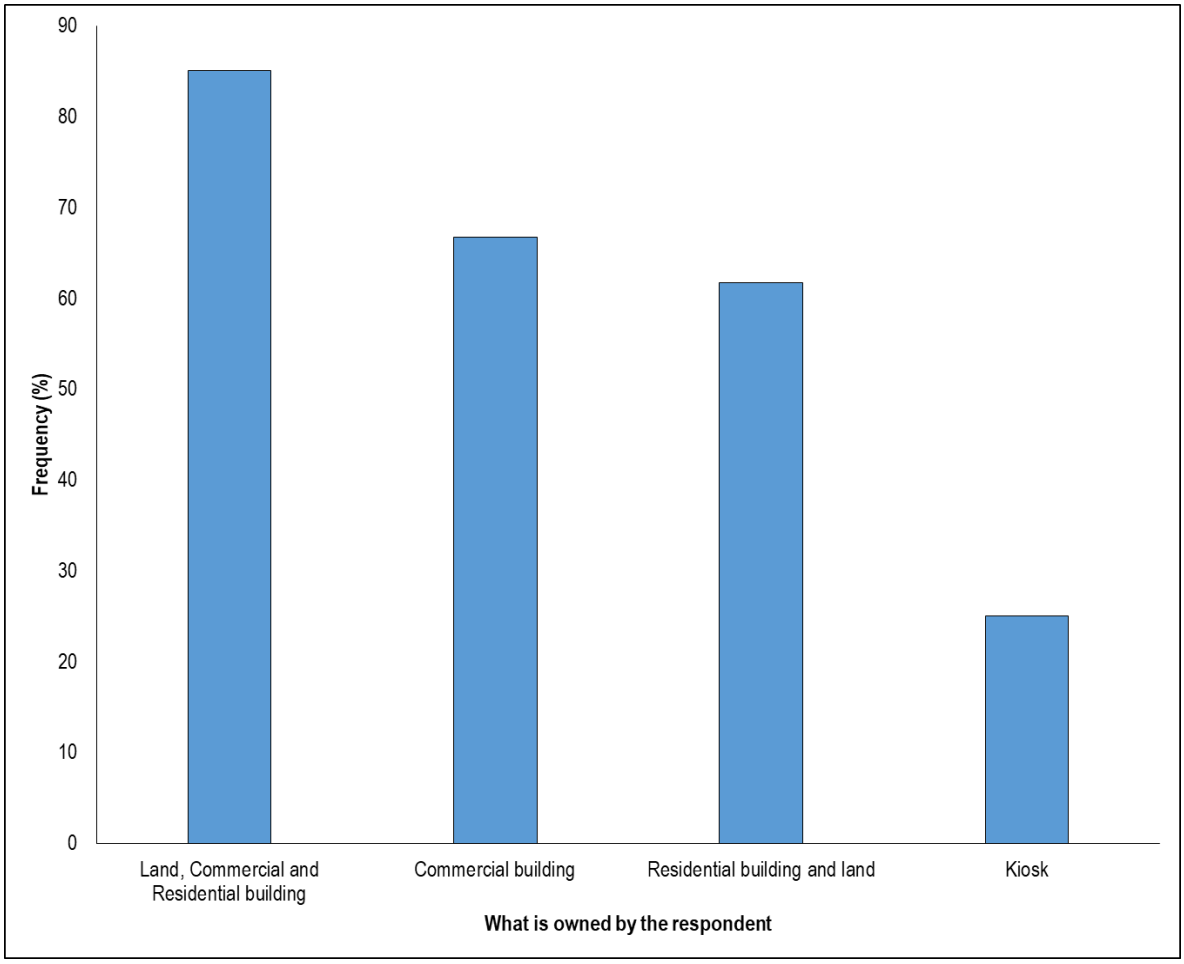


Figure 1: Asset Ownership

4.4 The time or duration spent by respondents in the area

Analysis revealed that the majority of the respondents interviewed had spent 16 to 30 years in the area followed by those who had spent 1 to 15 years. Indeed, the majority of the respondents had lived in the project area for over 16 years and above (Figure 2).

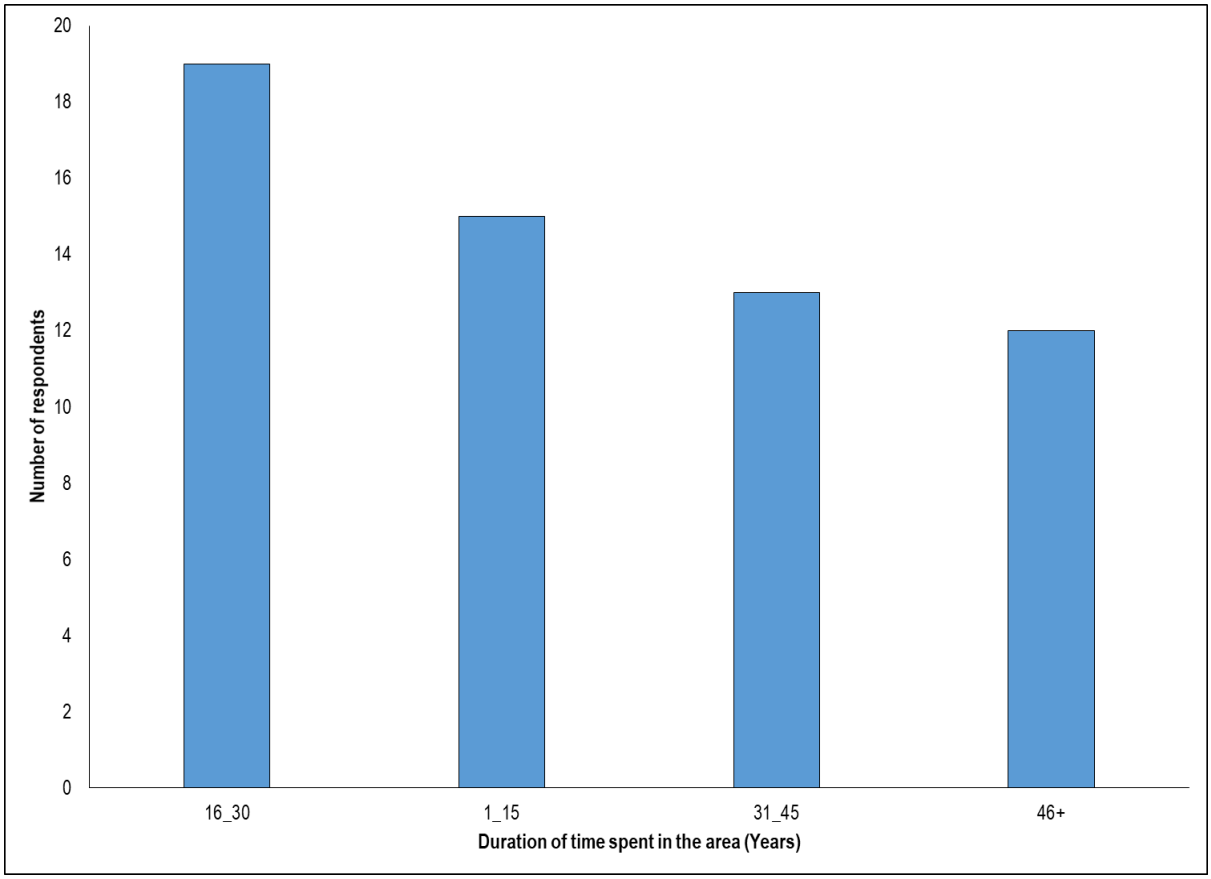


Figure 2: The time or duration spent by respondents in the area

4.5 Reasons for settling in the study area

The results showed that respondents had a multiplicity of reasons for settling in the project area. Most people settled in the area because it is close to work while some respondents indicated that it is simply their place of birth. Several other reasons including safety and security, the suitability of the area for business, social networking among others were also cited in the study (Figure 3).

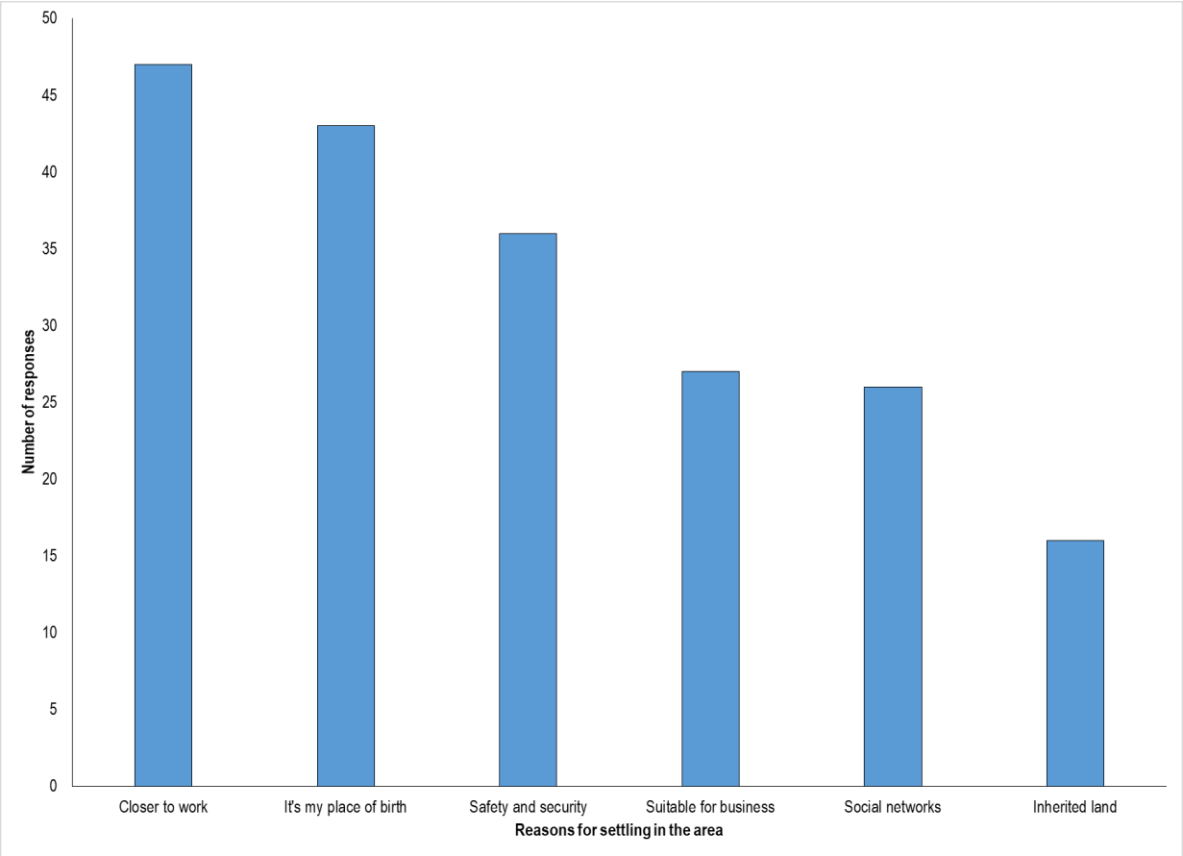


Figure 3: reasons for settling in the area.

4.6 Impacts of road construction.

4.6.1 Perceived environmental impacts

4.5.1.1 Environmental impacts before road construction

Analysis revealed that before the road construction project, the project area experienced predominantly dust pollution, followed by uncontrolled waste management, and soil erosion in

the environment (Table 2). Other experiences included noise pollution and deforestation according to the respondents' views (Table 2).

'The road was too dusty which was an outcry for government to help us construct it, moving from kasangati to kiira was problematic because o boda b-da would wish to ride you there" (by Sserunjoji Lawrence 40 year from Kyankima FGD*)*

Table 4.2: Environmental impacts of the Kiira-kasangati-Matugga road before construction project

Experiences in the area	Frequency	Percent (%)
Dust pollution	37	61.7
Uncontrolled waste management	26	43.3
Soil erosion	23	38.3
Noise pollution	20	33.3
Deforestation	16	26.7
Total	**122**	**203.3**

Most of the Focus Group Discussion (FGD) insights revealed that deforestation occurred after project-affected persons learned about the upcoming road development. In an attempt to either benefit from potential compensation or salvage valuable timber, they cleared trees.

4.5.1.2 Environmental during road construction.

Analysis revealed that environmentally, the road construction project has affected the environment negatively in several ways. The road project development has affected the environment predominantly through, increased dust pollution, noise pollution especially during the construction phases (Table 3).

Table 4.3: Environmental impacts of the kiira-kasangati- Matugga road project during construction.

Impact	Frequency	Percent (%)
Increased dust pollution	43	67.2
Noise pollution	35	54.7
Soil erosion	28	43.8
Uncontrolled waste management	21	32.8
Flooding due to storm water runoff	16	25.0
Water pollution	13	20.3
Total	**156**	**243.8**

FGD discussions and key informant interviews indicated that while some dust was present during the pre-construction phase, it significantly increased during the construction phase due to the frequent movement of large contractor vehicles transporting materials to the site. Also, too much noise from the vehicles during construction was unbearable and believed to have health impacts especially to people near the road project with underlying illness.

4.5.1.3 Environmental impacts after construction.

The respondents revealed an issue of noise pollution even after the road construction project arising from the increased developments especially in urban centers. Other impacts reported include water pollution, soil erosion and deforestation in the fairly remote patches of the project area (Table 4/ Figure 4).

Table 4.4; Environmental impacts of Kiira-Kasangati-Matuuga after construction.

Impact	Frequency	Percent (%)
Noise pollution	35	58.3
Water pollution	25	41.7
Soil erosion	23	38.3

Deforestation	18	30

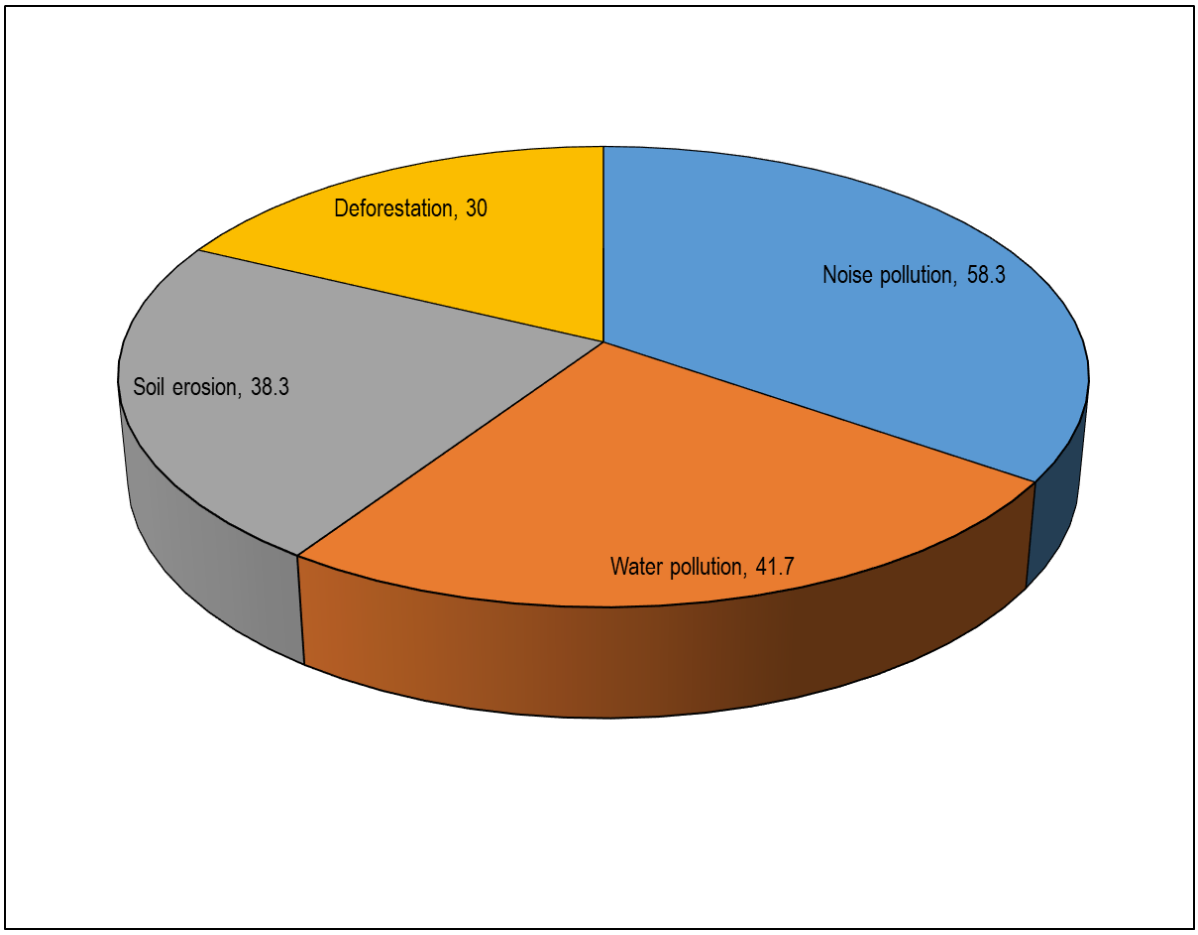


Figure 4: Environmental impacts of Kiira-Kasangati-Matuuga after construction

4.5.2 Perceived economic impacts

4.5.2.1 Perceived economic impacts before road construction.

Before the road construction project, the baseline conditions according to the respondents were predominantly increased urbanization, and prices for living costs (Table 5/ Figure 5). Other circumstances that prevailed included increased real estate and land prices, and a recognizable limited customer base in the community (Table 4.5/ Figure 5).

Table 4.4: Perceived economic impacts before road construction.

Baseline conditions	Frequency	Percent
Increased urbanization	33	55
Increased prices for living costs	28	46.7
Increased real estate and land prices	23	38.3
Limited customer base	18	30
Total	**102**	**170**

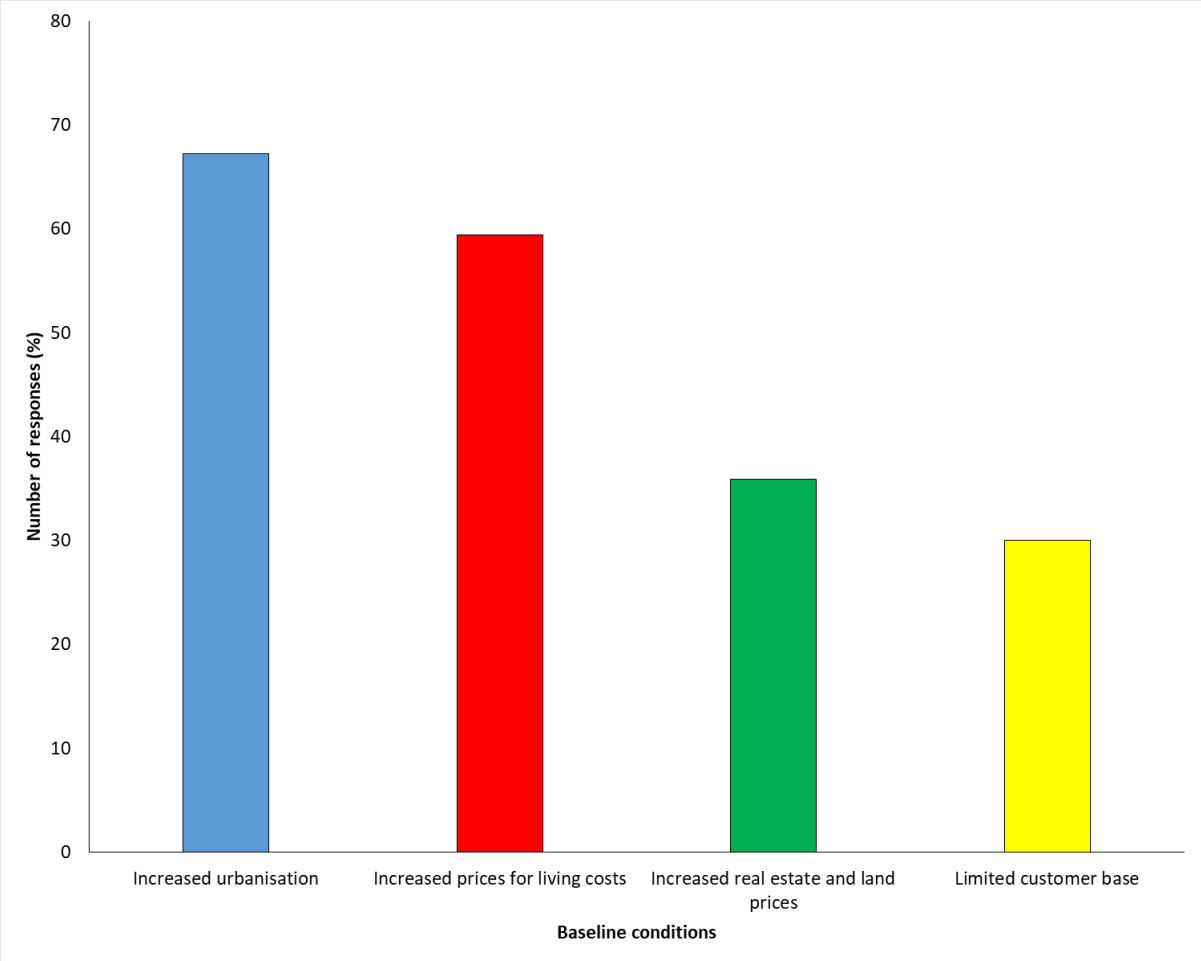


Figure 5: Perceived economic impacts before road construction.

4.5.2.2 Perceived economic impacts during road construction

Economically, the road construction project has led to increased urbanization along the road networks and nearby trading centers which has eventually resulted into increased food prices

and trade in addition to disruption to business operations and increased real estate and land prices in the area (Table 5).

Table 4.5: Economic impacts of the Kiira-Kasangati-Matugga road during construction.

Impact	Frequency	Percent
Increased urbanization	43	67.2
Increased prices for living costs	38	59.4
Disruption to business operations	31	48.4
Increased real estate and land prices	23	35.9
Loss of property like traditional houses	10	15.6
Total	**145**	**226.5**

4.5.2.3 Perceived economic impacts after the road construction

Economically, the most reported impact of the road construction project was increased urbanisation, followed by increased real estate and land prices, and increased prices for living costs among other impacts (Table 6).

Table 4.6: Economic impacts of the Kiira-Kasangati -Matugga road project

Impact	Frequency	Percent
Increased urbanization	55	91.7
Increased real estate and land prices	51	85
Increased prices for living costs	47	78.3
Disruption to business operations	27	45
Total	**180**	**300**

4.5.3 Perceived social impacts of road construction.

4.5.3.1 Perceived social impacts before

Before road construction, the respondents indicated that they always experienced immigrations from other areas, gender-based violence and displacement of homes/families among other experiences (Table 7).

Table 4.7: Perceived social experiences before the road construction project

Experiences	Number of responses	Percent
Immigrations from other areas	34	53.1
Gender based violence	23	38.3
Displacement of homes/families	17	26.6
Family breakups	15	25
Total	**89**	**143**

4.5.3.2 Perceived social impacts during road construction

In this assessment, analysis revealed that the most recognized impact of the project is immigration of people from other areas to the project area as a result of projected development, followed by conflicts arising from sharing road compensation funds and loss of property like houses or homes among other impacts (Figure 6).

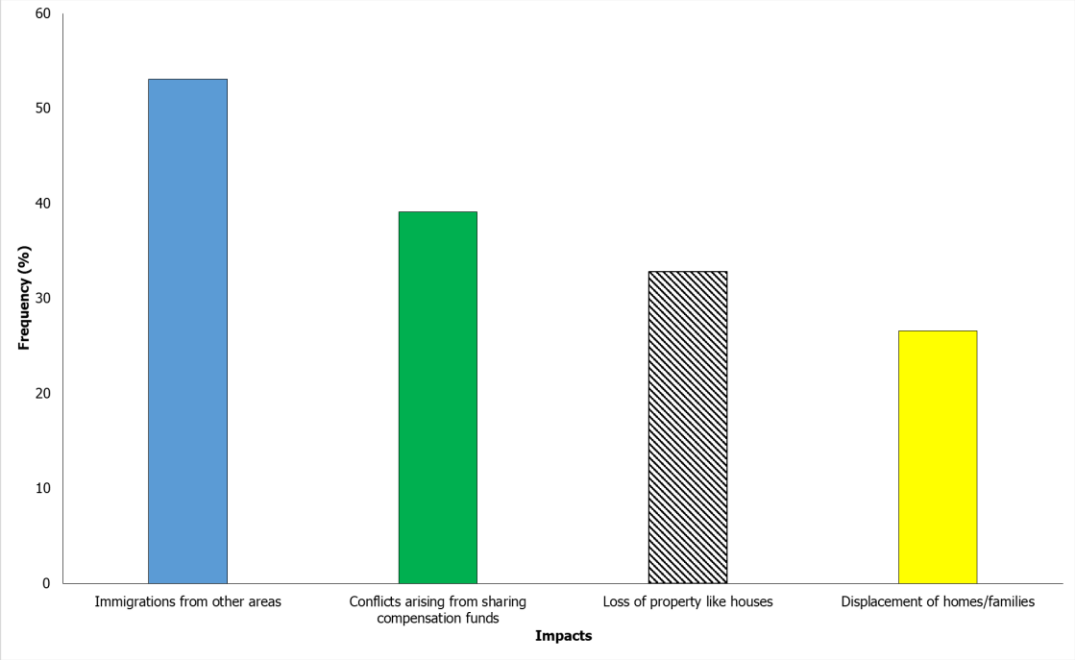


Figure 6: Social impacts of the Matugga road construction project

4.5.3.3 Perceived social impacts after road construction

In this assessment, analysis revealed that after road construction, respondents were mainly impacted through immigration of people from other areas to the project area as a result of projected development, followed by Gender -based -violence, family breakups and some cases of land grabbing (Table 8).

Table 4.8: Perceived socio impacts after the road construction project

Impact	Frequency	Percent
Immigrations from other areas	25	41.7
Gender based violence	16	26.7
Family breakups	9	15
Land grabbing	5	8.3
Total	**50**	**91.7**

4.5.3 Respondents perceived access to social amenities after road construction

In the midst of the road comstruction project, the respondents still believe that the social amenities have not changed whereas 55.9% of the respondents indicated that the social amenities have improved with 20.3% indicating greatly improved (Figure 7).

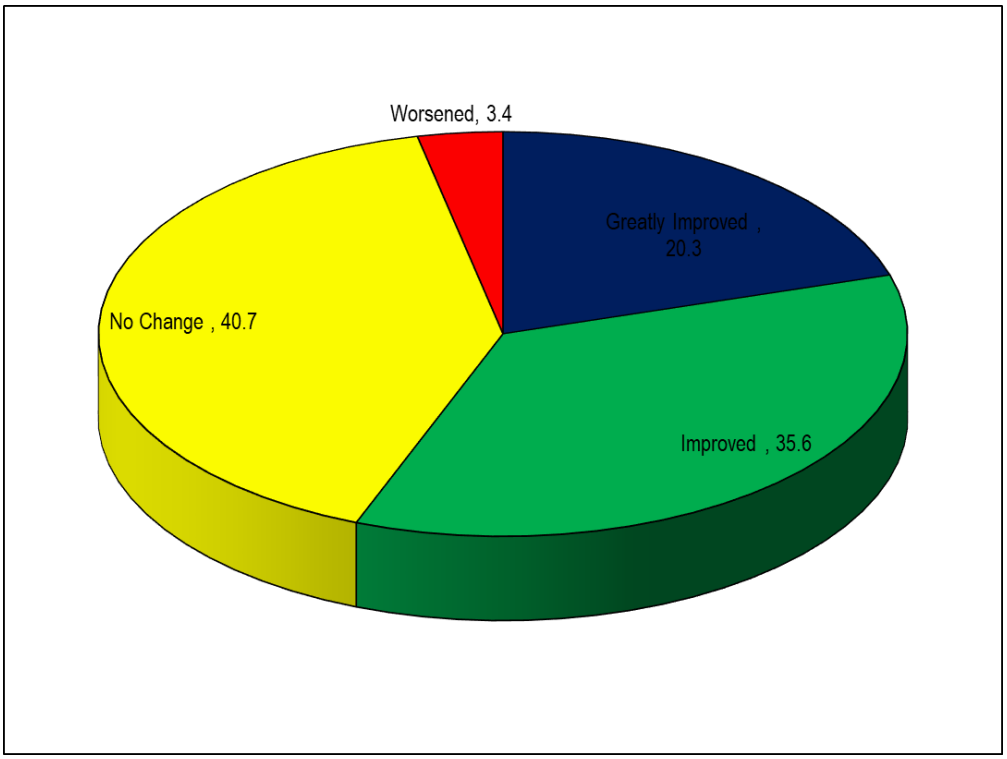


Figure 7: Social impacts of the Matugga road construction project

4.5.4 Inferences about socio-demographic characteristics and the impacts of the road construction reported.

The impacts were statistically tested against the socio-demographic characteristics using chi-square test for independence/association. The test returns a Cramer's value and a probability value which measures statistical significance of the association. The Cramer's V (Table 8) is a statistical measure used to assess the strength of association between two categorical variables and provides a value between 0 and 1, indicating the degree of association of the variables. A Crammer's V of 0 suggests no association, while a value of 1 indicates a very strong association

Inferential analysis revealed that statistically, the location of the respondent was significantly ($p < 0.05$) associated with impacts including increased dust pollution, noise pollution, soil erosion and water pollution with households neighboring the project area reporting more of such impacts than those who are distant (Table 9).

The education level attained by the respondent significantly ($p < 0.05$) impacted on their perceived impacts from the road project, with the Conflicts arising from compensation funds sharing and increased prices for living costs being mainly reported by the less educated respondents (Table 9). This implies that the less educated individuals perhaps had fewer financial abilities than the educated ones.

The age on the other hand was significantly ($p < 0.05$) associated with the reported loss of property like traditional houses and displacement of homes/families, with the old-aged being the most impacted respondents.

The occupation of the respondent was also an important factor that was significantly ($p < 0.05$) associated with disruption to business operations and poor accessibility to homes and gardens due to raised landscapes (Table 9). People who operate business especially near the project area reported disruption of the businesses as opposed to those who are distant which was the same scenario with homes nearby to the project area reporting poor accessibility to homes and gardens due to raised landscapes especially during the construction phase of the road.

Table 4.9: statistical inferences about the relationship between demographic attributes and different reported impacts

Socio-demographic attributes	Impact	Cramer's V	P-Value
Location of respondent	Increased dust pollution	0.35	0.045
	Noise pollution	0.424	0.01
	Soil erosion	0.163	0.02
	Water pollution	0.152	0.041
Education Level	Conflicts arising from Compensation funds sharing	0.192	0.029
	Increased prices for living costs	0.201	0.018
Age	Loss of property like traditional houses	0.216	0.008
	Displacement of homes/families	0.194	0.011
Occupation	Disruption to business operations	0.236	0.001
	Poor accessibility to homes and gardens due to raised landscapes	0.164	0.048

4.6 Challenges faced by the people in the project area

The biggest challenge reported was financial constraints arising from the disturbed business, followed by health complications, reduced income, delayed compensation and increased food insecurity (Figure 8).

They have delayed to pay us where UNRA marked for road development, one wonders if that compensation money will be enough for us to relocate to other areas given the time lag.

The tenants have since vacated the units when they heard that UNRA had affected our property, moreover some of them are there but refused to pay rent.

The contractors' workers came into the area with different habits, some of them entered into intimate relationships with married women which has led to family breakups and conflicts.

Our land titles were taken by UNRA after land acquisition and never returned since 2019, this is a long period of time, we could use our land titles to get loans from the bank to boost businesses but now that's not possible.

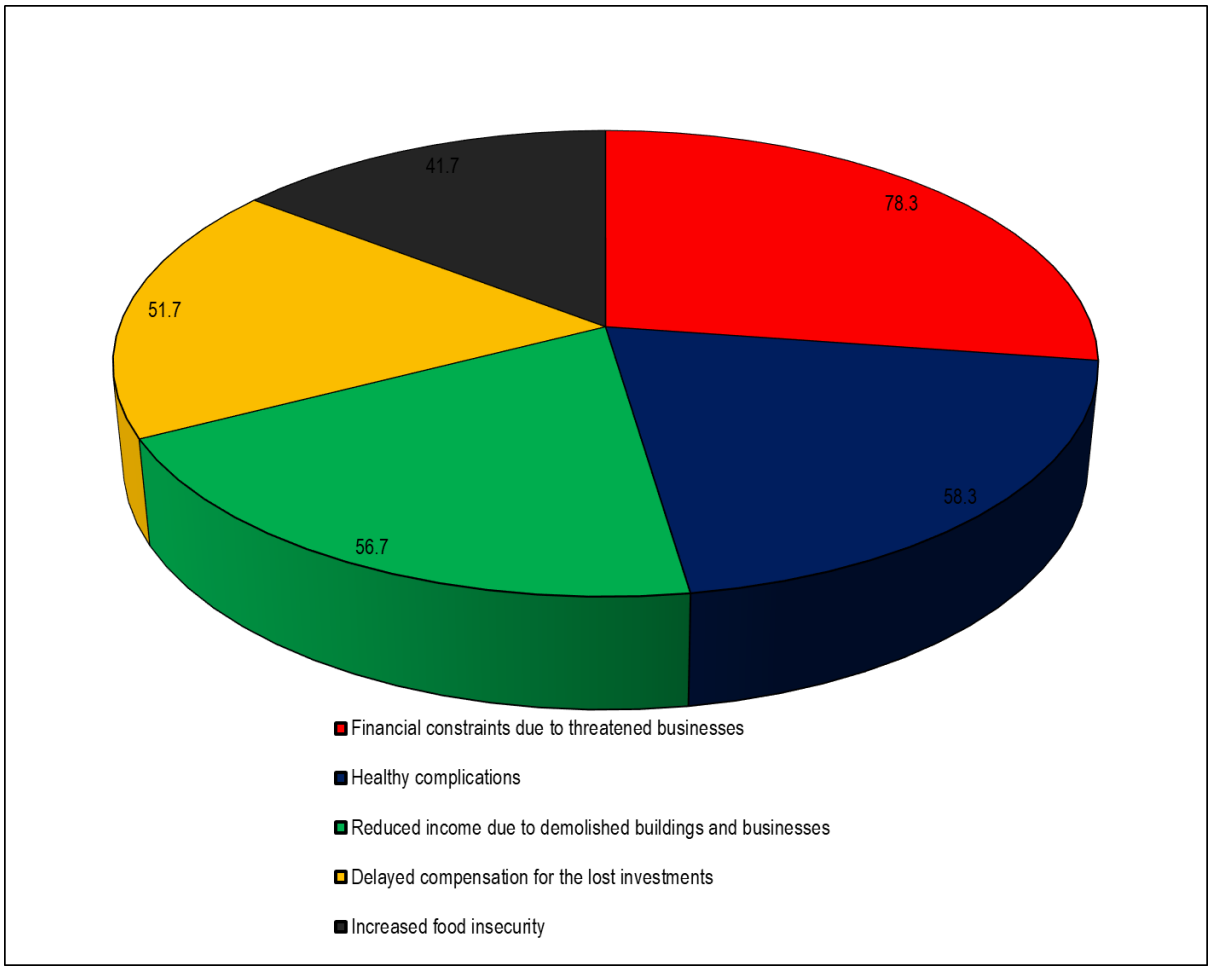
The food trees and gardens within the project area were destroyed, this disturbed our food security and it has happened at the same time when the government has delayed to bring our compensations although our sources of income were destructed.

The breathing is much complicated due to the flowing dust into our houses. The dust has made us sick and we do not have where to go, we just have to dare the situation until when the project is completed.

Culverts were poorly made where by rainy water flows out hence flooding and increasing a lot of health and death threats to people surrounding the affected communities.

After road construction most of the houses were left hanging without access to their homes which makes movements very difficult. Such places the road left raised soils and grounds that were not leveled for easy accessibility from their houses.

Figure 8: Challenges faced by people in the project area.



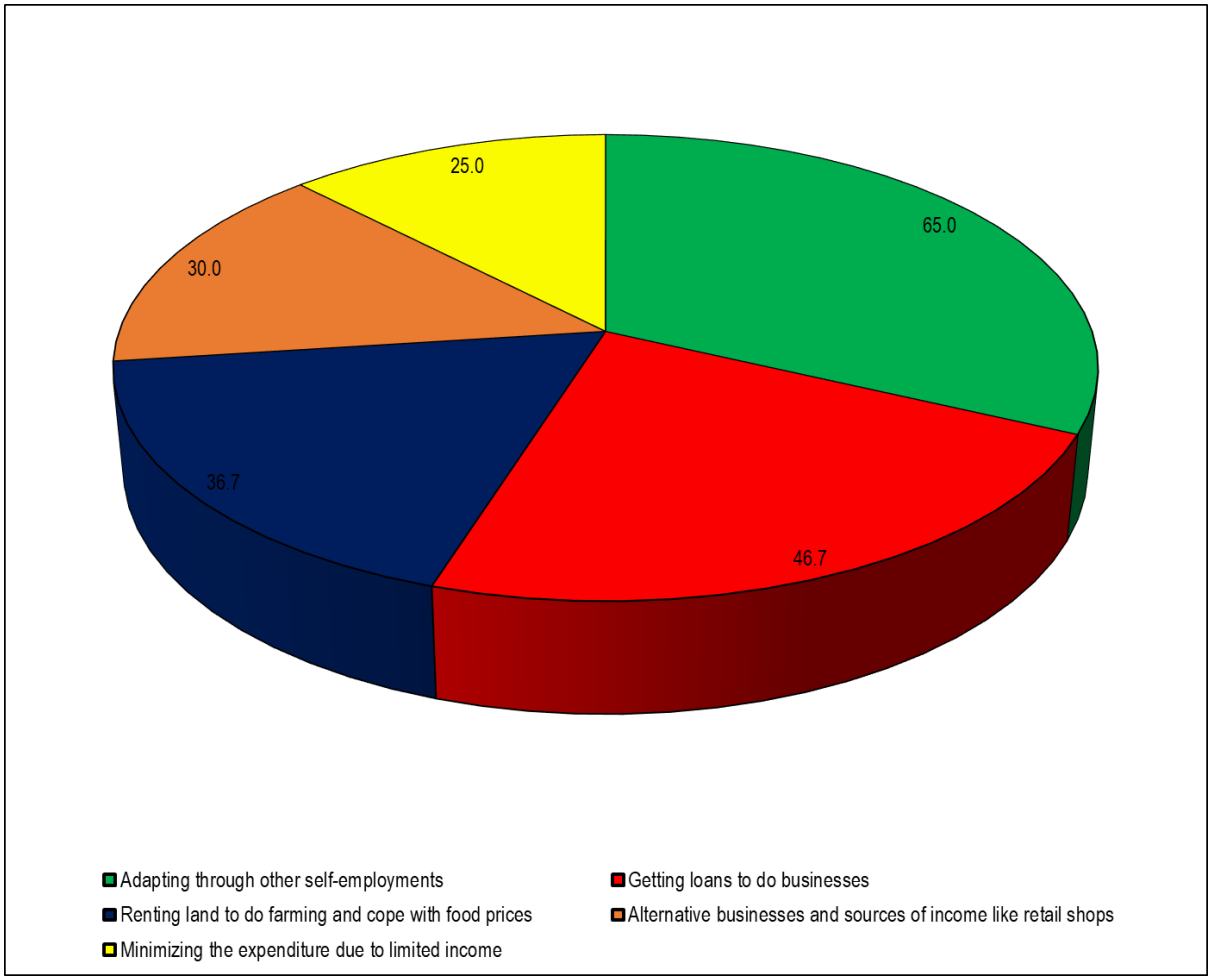
4.7 Coping strategies to the challenges employed by the people in the project area

The respondents indicated that they majorly developed alternative forms of self-employment to curb the issue of limited income, followed by getting loans to pursue business and renting land to do farming and cope with food insecurity and increased prices (Figure 9).

In regard to delayed compensation, we have decided to wait and be patient because government projects usually come with positive benefits but it is painful. (FGD).

We have always requested the contractor to pour water where road works are to reduce dust which can affect businesses and health of people.

Figure 9: Copying strategies to the challenges faced by people in project area.



CHAPTER FIVE

5.0 DISCUSSIONS OF FINDINGS.

This chapter revisits and reinterprets the study's findings through the dual philosophical lenses of post-positivism and interpretivism**,** offering a more comprehensive and nuanced understanding of the socio-economic and environmental impacts of the Kiira-Kasangati-Matugga road construction project. Post-positivism, rooted in empiricism yet acknowledging the fallibility of observation and the theory-laden nature of facts, lends itself to objective, statistical analysis and generalization. Interpretivism, in contrast, emphasizes the subjective meanings and lived experiences of individuals, valuing context, narrative, and the co-construction of reality. These two paradigms, while often portrayed in tension, can also be productively juxtaposed to yield richer insights. Thematic discussions in this chapter interrogate findings from both perspectives, identifying philosophical tensions and implications for research and practice. The chapter provides an in-depth discussion of the key findings presented in the previous chapter, with a focus on interpreting the results in relation to the research objectives and existing literature. The findings are discussed thematically based on the major aspects: assets owned by the respondents, duration of stay in the project area, and reasons for settling in the area. This chapter presents a detailed interpretation of the impacts of the Kiira-Kasangati- Matugga road construction project, focusing on the environmental, economic, and social dimensions, before during and after road construction. The analysis is contextualized within broader development literature, and inferential insights from the data are integrated to explain how demographic factors influenced respondents' perceptions in the discussions below.

5.1 Socio-demographic characteristics of respondents.

From a post-positivist standpoint, the demographic profiling of respondents, especially the dominance of older male participants and the prominence of trading occupations, provides

quantifiable patterns that shape general conclusions about stakeholder vulnerability and responsiveness. Inferential analysis shows that these patterns correlate with differences in perception, particularly regarding economic and environmental impacts, lending statistical credence to claims of uneven impact distribution.

An interpretivist interpretation**,** however, pushes us beyond the numbers, it urges a deeper exploration of wh*y* older participants responded more was possibly due to their deeper historical engagement with the land or a stronger attachment to its socio-cultural significance. The respondents' narratives reveal affective and identity-based relationships with place that are irreducible to variables. For instance, a 53-year-old participant from Lwada village doesn't just report displacement, he evokes loss of livelihood and betrayal by a system that delayed compensation. This tension between abstraction and situated meaning calls for methodological pluralism. Post-positivist inference helps policymakers scale insights, while interpretivism brings to light the moral and emotional weight of those insights.

The survey included 64 participants from different divisions within Wakiso District namely Gombe, Kyadondo, Lwadda, and Matugga. The demographic profile shows a predominance of male respondents (60.9%), with the largest age group being individuals aged 55–64 years (29.9%), closely followed by those aged 35–44 (28.1%). The data suggests that older adults were more responsive or possibly more available and concerned about the road construction impacts. A significant proportion of respondents (60.4%) were engaged in business or trade, indicating that the study area has a strong entrepreneurial base. Other occupations were relatively few, with farmers comprising 14.2% of the sample. Educationally, a majority had attained at least secondary education, although 26.6% had only primary education, and a small percentage (9.4%) had no formal education. This variation in educational attainment is

important in interpreting differences in perceived impacts, as reflected in the inferential analysis.

5.2 Assets owned by respondents.

Quantitatively, the data on asset ownership, homes, and kiosks affirm the economic embeddedness of respondents in the project area. A post-positivist analysis confirms that asset ownership statistically predicts the intensity of perceived disruption, echoing (Feder and Feeny David, 1991) conclusions on land tenure and development conflict. These findings support causality-oriented explanations for resistance or demand for higher compensation. The interpretivist view**,** however, centers the symbolic and emotional meanings of these assets. A home is not merely real estate but a repository of memory, lineage, and identity. Thus, disruptions are not just economic but existential. The road project, seen through this lens, represents not development but intrusion one that reconfigures spaces of belonging into zones of uncertainty.

Integrating both views reveals how development-induced displacement is not only material but also the emotional state. This dual recognition is crucial in designing fairer compensation and relocation policies that respect both the economic value and the socio-cultural significance of place.

The study revealed that a majority of respondents own multiple properties of land, residential, and commercial buildings within the road construction project area. In addition, a number of respondents also indicated ownership of business kiosks. This high level of asset ownership points to a deeply rooted investment in the area by the local population. Ownership of multiple types of property signifies a sense of permanence and attachment to the land, which likely influences perceptions and reactions toward development projects such as road construction. These findings suggest that any disruption caused by the project be it physical displacement, noise, or temporary inaccessibility could have significant implications on the livelihoods and

emotional well-being of residents. Property ownership also implies a potential for complex negotiations regarding compensation, as those with multiple or commercially viable properties might demand higher restitution. These insights are consistent with studies by Gershon Feder and David Fenny (1991), who argued that land tenure and property ownership are major factors influencing stakeholder resistance or support in infrastructure development projects.

5.3 Duration of stay in the area.

Post-positivist reasoning highlights the correlation between duration of residence and resistance to change. The longer one has stayed, the stronger the social ties and perceived negative impacts. Elena A. Korosteleva and Irina Petrovaa, (2022) argument about community resilience aligns with these statistical trends. From an interpretivist frame, however, duration translates into layers of personal and collective memory. A long-term resident doesn't just see the road as infrastructure but as a rupture in a historical narrative. The length of stay intertwines with generational continuity and communal identity where space is socially constructed and relational. The epistemological tension here lies in the difference between residence as a variable and residence as a story. Bridging these paradigms reveals the need for development approaches that not only mitigate disruption but also preserve narrative continuity allowing communities to reweave disrupted stories.

Analysis of the duration of residence indicated that most respondents had lived in the area for between 16 and 30 years, with a significant number having stayed for over 30 years. This long period of residence reflects a strong sense of place and community. Such longevity suggests that the respondents have established deep social ties and emotional attachments, which further complicates their potential displacement or disruption due to the construction project. The length of residence is not only a marker of personal investment but also social stability and community cohesion. Individuals who have lived in a place for decades are likely to have

witnessed its transformation, contributed to its development, and developed networks that support their socio-economic well-being. This aligns with the findings of Elena A. Korosteleva and Irina Petrovaa (2022), who emphasized that long-term residents tend to have a more resilient sense of community and are more resistant to change that threatens the status quo.

Voices from FGD's where captured where a one participant Namulinda Harriet age 78 said "it is painful for me to leave this community, all my property was affected by the road project, I was born in this community, i have fear to relocate to a new area.

5.4 Reasons for settling in the area

Respondents cited reasons such as proximity to work, business opportunity, and social safety, which post-positivism reads as rational motivations for urban settlement. These are quantifiable pull-factors that conform to urban planning theories and can guide future zoning decisions. Yet the interpretivist lens draws attention to how these reasons are embedded in lived relationships between people, between generations, and between people and place. Someone "born in the area" holds a different relationship to it than someone who moved for business. These narratives challenge the neutrality of space, suggesting instead that meaning is co-produced by social actors. In this tension, we see how urban development planning can often over-rely on functionalist logics and overlook symbolic geographies. An integrated perspective would thus necessitate participatory planning that honors both economic rationale and lived attachments.

Respondents cited various reasons for settling in the project area, including proximity to workplaces, being born in the area, safety and security, business opportunities, and social networks. This diversity of reasons underscores the multifaceted value the area holds for its residents ranging from economic benefits to emotional and social factors.

Proximity to work was the most frequently mentioned reason, indicating the functional importance of the location in relation to daily economic activities. Those who cited it as their place of birth reflect generational continuity, suggesting that the area is not just a residential space but also a cultural and familial home. Business suitability and social networking highlight the area's role in supporting economic activity and communal living, which are critical components of urban livelihood systems.

These findings correspond with urban settlement theories that emphasize both "push" and "pull" factors in residential decision-making. For example, (Erik Lindberg et al., n.d.) noted that the availability of employment opportunities and social amenities are key determinants of urban settlement patterns. Moreover, the social capital inherent in such communities fostered through long-term residence and networking has been found to contribute significantly to resilience against displacement and external threats.

5.5 Environmental impacts of road construction

The environmental degradation documented dust, noise, flooding, and erosion is robustly supported by quantitative data, fitting squarely within post-positivist concerns about cause-effect relationships and environmental risk assessment. The proximity-based increase in reported impacts validates the hypothesis that those nearest to the site suffer more, which is actionable in policy and planning. However, **i**nterpretivism reveals a more textured landscape of suffering. Respiratory illness, as narrated by Nanteza Eva, is not just a health outcome it is a daily ordeal embedded in vulnerability and spatial powerlessness. The dust is both literal and symbolic, representing the absence of control over one's environment. This dual reading suggests a critical need to move beyond environmental impact assessments as check-box exercises. Instead, a participatory environmental justice framework one informed by both data and dialogue should underpin future infrastructure planning.

The findings reveal a clear shift and intensification in environmental degradation from the period before to during the road construction project. Prior to construction, the area experienced significant dust pollution (61.7%), uncontrolled waste (43.3%), and soil erosion (38.3%), alongside notable cases of noise pollution and deforestation.

However, during construction, these environmental issues not only persisted but worsened. Notably, dust pollution rose to 67.2%, while noise pollution increased to 54.7%. New challenges such as flooding from stormwater runoff (25%) and water pollution (20.3%) emerged, reflecting the disruptive effects of ongoing earthworks and machinery operations.

These outcomes align with previous findings by (Gibson, 2001), who observed that infrastructure projects in peri-urban environments often lead to short-term environmental degradation due to inadequate environmental management plans. The statistical inferences support this: respondents living closer to the construction site reported significantly more environmental impacts for example (dust, noise, soil erosion), emphasizing that geographical proximity to the project is a strong determinant of environmental vulnerability.

The findings of this study disclose that despite the anticipated benefits of road construction; environmental degradation remains a pressing concern among community members in the post-construction phase. The most commonly cited issue was noise pollution, with 58.3% of respondents acknowledging its persistence after the completion of the project. This is likely attributed to increased vehicular traffic and associated urban activities, particularly in densely populated or rapidly urbanizing areas adjacent to the new infrastructure.

*Additionally, water pollution was reported by 41.7% of respondents. This could be linked to construction runoff, improper waste disposal, or the disruption of natural drainage patterns caused by expanded development in the area. Soil erosion**,** noted by 38.3%**,** and deforestation**,***

reported by 30%, also emerged as significant post-project concerns. These environmental effects are particularly prominent in the more remote or rural segments of the project area, where vegetation cover may have been disturbed during roadworks and not adequately rehabilitated afterward.

These findings are consistent with previous studies that highlight the unintended environmental consequences of infrastructure expansion, particularly in ecosystems with minimal pre-existing disturbance. They also underscore the importance of integrating sustainable construction practices and post-construction environmental management plans in future projects. Refer *to Table 2 for detailed data representation of the environmental impacts.*

5.6 Economic impacts of road construction.

The economic effects of the project rising urbanization, living costs, and real estate speculation are presented with statistical clarity. Post-positivism helps map trends identify vulnerable groups (e.g., the less educated), and predict economic exclusion. Interpretivist insight, however, emerges in the stories of disrupted businesses and adaptive labor (e.g., Faridah transitioning from a salon to snack vending). These are not merely reactions to macroeconomic forces but acts of agency, resilience, and improvisation in the face of systemic neglect. The tension here lies in the policy implications. Post-positivism would suggest macroeconomic offsets (e.g., subsidies, retraining). Interpretivism demands institutional recognition of everyday resilience and calls for locally rooted support mechanisms where both are necessary for sustainable and inclusive development.

Prior to the commencement of the road construction project, respondents highlighted several economic trends shaping the community's socio-economic environment. Most prominently, increased urbanization was reported by 55% of respondents, suggesting a pre-existing pressure on infrastructure and services even before the road project began. This trend likely

set the stage for the road project itself, as it reflects growing demand for improved transportation and connectivity. Rising living costs, cited by 46.7% of respondents, and increased real estate and land prices (38.3%) further illustrate the economic strain felt by residents during the pre-construction period. These developments typically accompany urban expansion and speculative investment, particularly in areas anticipating infrastructure upgrades. Interestingly, 30% of participants also pointed out a limited customer base, indicating a mismatch between growing infrastructure and the actual economic vibrancy of the local economy at that time. This could reflect a transitional stage in development, where physical expansion was not yet matched by a proportional increase in economic activity. These baseline economic conditions suggest that the road construction project was both a response to and a catalyst for broader urban and economic transformations in the region. Refer to Table 5 and Figure 5 for the full summary of economic baseline data.

The economic impacts of the Matugga road project present a dual narrative one of developmental opportunity and short-term economic strain. During construction, there was a reported increase in urbanization (67.2%), alongside a rise in cost of living (59.4%), and business disruption (48.4%). These disruptions likely stem from access issues, noise, and limited parking or foot traffic, which affect customer flow.

After construction, the perceived economic impacts became even more pronounced. Urbanization rose to 91.7%, and real estate prices increased dramatically (85%). These changes reflect the broader economic transformation driven by improved infrastructure, often leading to land value speculation and gentrification. While this can be positive in the long term, the sharp increase in living costs (78.3%) indicates economic exclusion risks for existing lower-income residents.

Inferential statistics show that education level played a significant role in how economic impacts were perceived: less educated respondents were more likely to cite rising living costs and disputes over compensation. This suggests potential inequities in how economic benefits and burdens were distributed, with the less educated potentially lacking the skills or capital to adapt quickly to the new economic environment

5.7 Social impacts of road construction

Quantitatively, social issues such as immigration, gender-based violence, and family displacement are measurable and trend-able, reinforcing post-positivist generalizability**.** The statistical association between occupation, age, and disruption offers predictive utility. But the interpretivist reading amplifies the subtle erosion of trust, safety, and kinship structures. Land grabbing is not just a policy failure it's a betrayal of social norms. Gender-based violence post-construction is not just a metric but a symptom of social destabilization and weakening community bonds. Here, methodological pluralism again proves essential. While generalizable data provides policy leverage, lived narratives caution against one-size-fits-all interventions and highlight the socio-moral implications of rapid urban change.

The social consequences of the project are complex and multi-phase. Before the construction, residents reported challenges such as immigration from other areas (53.1%), gender-based violence (38.3%), and family displacement (26.6%). These indicate pre-existing vulnerabilities in the area that were likely exacerbated during development.

During construction, immigration continued, but was now driven by speculation around future development. At the same time, issues such as conflict over compensation and loss of homes emerged, showing how road development can create social tensions when property rights and entitlements are unclear.

After construction, immigration remained high (41.7%), but new concerns arose notably, gender-based violence (26.7%), family breakups (15%), and land grabbing (8.3%). These outcomes may be symptomatic of rapid urban change outpacing social infrastructure and governance mechanisms. Moreover, the increase in reported land grabbing post-construction is consistent with trends seen in other urbanizing regions, where formal land tenure systems are weak or contested. Demographically, older respondents were more affected by property loss and displacement, likely because they had more immovable assets and deeper ties to ancestral land. Occupation was also a major factor: those engaged in business near the project area were more likely to report disruption to operations and poor accessibility to homes/gardens caused by raised road structures.

5.8 Access to social amenities

The finding that many respondents perceived improvements in amenities resonates with post-positivist optimism around infrastructure-led development. Quantitative data suggests physical gains that support policy claims. Yet, from an interpretivist angle, the uneven experience of these amenities felt more by some than others point to social inequality and differential access. A paved road is not experienced the same way by someone whose child's school is now further away or who cannot afford increased transport fares. This tension speaks to the concept of "infrastructural justice": the idea that access must be not only available but equitably distributed and meaningful within people's everyday lives.

Despite the disruptions, perceptions about social amenities were mixed. While a segment of the population felt little to no improvement, 55.9% indicated improved amenities, and 20.3% noted great improvement. This suggests that while physical infrastructure has advanced, the benefits are not yet universally experienced, possibly due to uneven service delivery or lagging public infrastructure upgrades such as schools, hospitals, and sanitation.

In summary, the inferential statistics further highlight how socio-demographic attributes shaped the lived experience of development impacts: Proximity to the road strongly correlated with environmental impacts. Lower education levels were linked to economic stress and compensation disputes. Older residents suffered more property losses. Occupation, particularly for business owners, significantly affected economic stability and access. These insights emphasize the need for context-sensitive planning and compensation mechanisms that consider demographic diversity and vulnerability during large-scale infrastructure projects.

The study sought to examine the challenges experienced by residents living near the Matugga road construction project and the strategies they adopted to cope with these hardships. Findings revealed that the road project, while promising long-term development, posed significant short-term socio-economic and health-related challenges to the local community. This section discusses these challenges and community-driven coping responses.

*The analysis identified financial constraints as the most pressing challenge reported by the respondents, largely stemming from disturbed business operations and the loss of income sources**.** Business activities were either partially or completely disrupted due to access limitations, noise, dust, and the displacement of vendors during construction.*

"Our sources of income were disrupted. The food trees and gardens within the project area were destroyed, this disturbed our food security and it has happened at the same time when the government has delayed to bring our compensations." (Walusimbi Steven 53 years from Lwada village)

Closely tied to the financial burden were health complications, especially respiratory problems caused by persistent dust pollution, as well as increased food insecurity due to the destruction of home gardens and fruit trees. These findings resonate with earlier data under the

environmental impacts section, reinforcing the assertion that those closest to the construction site suffered disproportionately from physical and environmental disruption.

"The breathing is much complicated due to the flowing dust into our houses. The dust has made us sick and we do not have where to go; we just have to dare the situation until the project is completed." (Nanteza Eva, age 49)

Other significant challenges included delayed compensation from authorities, which worsened economic hardships. For many, compensation delays meant they were unable to relocate, reinvest in businesses, or seek proper medical care for ailments believed to be construction-related. This has contributed to growing frustration and reduced trust in government processes.

These issues are consistent with findings from infrastructure studies elsewhere in Sub-Saharan Africa, where compensation delays and health hazards are common concerns in communities affected by development projects e.g., (Calderon & Serven, 2004)

Despite these challenges, the affected communities displayed considerable resilience through various coping mechanisms. The most common strategy was the development of alternative forms of self-employment, such as petty trade, informal transport services (e.g., boda bodas), and small-scale food vending. These helped fill income gaps left by disrupted formal or semi-formal employment.

"I could no longer operate my salon near the road due to the dust and noise, so I started selling snacks from home to earn something daily." (Nambooze Faridah, Female, Age 34)

Another key strategy was accessing loans, often from informal savings groups or community cooperatives, to either restart or diversify income sources. These financial lifelines, while sometimes placing households in debt, offered short-term relief amidst economic uncertainty.

A further coping strategy was renting land in neighboring areas for farming, especially to mitigate the impact of lost gardens and rising food prices. This strategy reflects both food and income insecurity and the adaptive use of available rural–urban linkages.

"We had to rent a small piece of land far from here so we could grow some food again because everything was destroyed by the machines." (Damulira John, FGD Participant, Male, Age 52)

*These findings show that while the affected residents faced systemic and structural challenges beyond their control, they remained proactive in navigating their economic and social environment. However, it is important to note that these coping strategies were largely individual or household-based**,** with little to no institutional support, which raises concerns about the **s**ustainability of such responses in prolonged construction or post-project periods.*

*These findings underscore the need for **i**nclusive planning frameworks in road construction projects. Affected communities should not only be involved in pre-project consultations but should also be equipped with support mechanisms during implementation, such as: timely and fair compensation, health and safety interventions (e.g., mobile clinics, dust control), temporary business relocation support and social safety nets for vulnerable populations*

Moreover, the reliance on personal coping mechanisms highlights inequities in institutional response, often leaving the most vulnerable to shoulder the burdens of development with minimal external assistance. This calls for policy shifts toward community-based mitigation strategies and adaptive urban development planning that protects, rather than displaces, existing livelihoods.

5.9 Coping strategies.

Both paradigms converge here, although differently. Post-positivism treats coping mechanisms as response variables an outcome of socio-economic shocks. But interpretivism reveals them as expressions of lived ingenuity, such as the formation of informal savings groups or renting land for farming. The recurring theme across these responses is resilience in absence adaptation in the face of inadequate institutional support. The philosophical implication is sobering: while systems rely on local resilience, they seldom reciprocate with structural protection. Thus, the final lesson from this dual-lens analysis is a moral-political one. Post-positivist methods can help measure the scale of impact; interpretivism reveals its depth. Together, they underscore the urgent need for responsive, participatory, and ethically grounded urban development strategies that honour both statistical significance and human meaning

CHAPTER SIX.

6.0 CONCLUSIONS AND RECOMMENDATIONS.

This chapter presents the key conclusions drawn from the findings and discussions of the study, and proposes actionable recommendations to guide future road construction projects in similar contexts. The goal is to inform policy makers, development planners, and community stakeholders on how best to balance infrastructure development with the social, economic, and environmental realities of affected populations.

6.1 Conclusions

The study examined the multifaceted impacts of the Matugga road construction project, particularly its environmental, economic, and social effects on local residents. The following conclusions were drawn:

6.1.1 Environmental impacts

Road construction activities have led to a significant deterioration of the local environment like increased dust and noise pollution, soil erosion, and waste mismanagement were reported as major environmental issues during construction. New environmental problems, such as stormwater flooding and water pollution, emerged during the construction phase, largely affecting households located closer to the project area. The study confirms that environmental impacts are geographically concentrated and require targeted mitigation strategies.

6.1.2 Economic Impacts

While the project has stimulated increased urbanization**,** higher land and property values**,** and enhanced economic activity**,** it has also caused temporary business disruptions and an increase in the cost of living particularly affecting low-income and less-educated residents. The economic benefits of the project were unevenly distributed. Less educated and economically vulnerable groups were more likely to feel the negative effects such as exclusion from compensation mechanisms and inability to adapt to rising prices.

6.1.3 Social Impacts

The road construction project led to considerable social change, there was continued immigration from outside communities, increasing social pressure on existing residents. conflicts related to compensation, gender-based violence, family displacement, and loss of property were particularly noted among older residents and those located nearest to the project site. Although some improvement in access to social amenities was noted, the changes have not been uniformly experienced by the entire community.

6.1.4 Demographic influence

Key demographic attributes such as location, education level, age, and occupation were statistically significant in determining how respondents perceived the impacts of the road construction. vulnerable groups such as the elderly, less educated, and small business owners were more negatively affected, underlining the importance of inclusive planning and targeted interventions.

The study has revealed that while the Kiira-Kasangati- Matugga road construction project holds long-term development potential, it has caused significant short-term hardships to communities living near the project area. The most prominent challenge faced by residents was financial distress, primarily due to business disruptions, delayed compensation**,** and reduced income sources**.** These economic setbacks were exacerbated by health complications**,** especially respiratory issues linked to dust, and food insecurity following the destruction of gardens and food trees. The situation was particularly difficult for vulnerable groups such as informal workers, the elderly, and women-headed households, who had limited access to external support mechanisms. Delayed compensation and a lack of timely government intervention further deepened the suffering of these communities. Despite these challenges, residents

demonstrated strong resilience by employing coping strategies such as engaging in alternative self-employment**,** accessing informal loans**,** and renting farmland in nearby areas. These responses reflect adaptability, but also underscore the lack of institutional support and the precarious nature of informal survival strategies. The findings point to a critical gap in infrastructure planning: while physical development is prioritized, the social and economic well-being of affected populations is often overlooked or delayed. For sustainable and inclusive infrastructure development, this gap must be addressed through proactive policy and support systems.

6.2 Recommendations

Based on the above conclusions, the following recommendations are proposed to improve the planning, implementation, and impact mitigation of future road construction projects:

6.2.1 Environmental management

Stronger environmental safeguards should be implemented during construction projects. This includes the use of dust and noise suppression technologies, such as watering roads to minimize airborne particles and strictly enforcing noise control guidelines. Environmental impact assessments (EIAs) must be strengthened by incorporating regular monitoring and active community participation, ensuring that environmental protection is maintained as an ongoing process rather than a one-time procedural requirement. Additionally, post-construction landscaping and effective drainage systems should be introduced to manage stormwater runoff and prevent both soil erosion and flooding.

6.2.2 Economic mitigation and inclusion

Compensation and livelihood restoration programs should be developed in a manner that is transparent and easily accessible, with particular attention given to vulnerable groups such as the less educated and the elderly. Financial literacy and business continuity training should be provided to small business owners affected by temporary disruptions, especially those operating near the construction zone. It is also important to monitor inflation in local markets during infrastructure projects and, if necessary, implement subsidies or price controls to protect vulnerable populations from sudden increases in the cost of goods and services.

6.2.3 Social safeguards and community well-being

Inclusive stakeholder engagement strategies should be designed and implemented before, during, and after construction in order to reduce misinformation and address grievances at an early stage. Large infrastructure projects should integrate social protection services, including temporary housing support, family counseling, and gender-based violence prevention, to better support affected communities. Legal assistance must be provided to residents who face issues such as land grabbing and displacement, particularly in the post-construction phase when rising land values can lead to speculative activities. Community members especially those directly impacted should be actively involved in decision-making processes, the valuation of compensation, and the monitoring of project activities. Community-driven solutions tend to be more adaptive and sustainable than top-down interventions.

6.2.4 Policy and governance

To ensure that infrastructure development is both equitable and sustainable, a comprehensive and inclusive approach must be adopted throughout the project lifecycle. This begins with the enforcement of clear regulations on land acquisition and compensation to minimize social

conflict and promote fair, transparent practices. Compensation processes should be completed prior to the onset of major disruptions, with clearly communicated timelines and institutionalized grievance redress mechanisms to build trust and prevent disputes.

Decentralizing project oversight by involving local governments and community-based organizations can strengthen transparency and accountability during implementation. Participatory planning should be institutionalized from the earliest stages, ensuring that the voices of local residents particularly those from marginalized groups—are heard and integrated into project design and decision-making.

Livelihood restoration and income support are essential for individuals whose economic activities are disrupted. Temporary financial aid, access to job opportunities within the project (such as casual labor), and targeted livelihood restoration programs should be made available. Special consideration must be given to informal business owners and vendors who may lack legal documentation but rely heavily on affected areas for daily survival.

Public health protections must also be prioritized. Authorities should enforce dust control measures, provide temporary health outreach services, and monitor the health status of at-risk populations living near construction zones. Public health education campaigns can further help residents understand and mitigate environmental risks associated with large-scale construction.

Environmental safeguards must be incorporated as well. dust and noise suppression technologies such as watering roads and enforcing noise control guidelines should be employed during construction. Post-construction, the installation of drainage systems and landscaping will help manage stormwater runoff, prevent flooding, and reduce soil erosion.

To enhance food security, especially for households affected by the loss of home gardens, community gardening initiatives, food aid, and agricultural subsidies should be promoted.

Coordination with local governments to allocate temporary farmland or provide access to affordable produce is essential during project implementation.

Furthermore, social protection services must be integrated into infrastructure projects. These include support for displaced families, family counseling, programs to prevent gender-based violence, and psychological support for those experiencing trauma-related displacement. Legal support should be available for residents facing land grabbing or displacement, especially in post-construction periods when rising land values may attract speculative behavior.

Above all, community members particularly those most directly impacted should be actively involved in key processes such as compensation valuation, monitoring activities, and decision-making. Community-driven solutions are often more responsive, adaptive, and sustainable than top-down interventions.

Policymakers and project planners must take these considerations into account to ensure that future infrastructure developments are inclusive, environmentally responsible, and sensitive to the socio-economic realities of affected populations. Mitigation measures such as robust compensation frameworks, environmental safeguards, and meaningful stakeholder engagement are crucial to enhancing the long-term success and community acceptance of such projects.

6.3 Final remarks

The Kiira-Kasangati -Matugga road construction project has unquestionably brought about physical and economic transformation in the area. The findings of this study indicate that road infrastructure development has had a statistically significant impact on the social, economic, and environmental well-being of the affected communities thereby confirming the research hypothesis and leading to the rejection of the null hypothesis. However, this progress has come

at a significant environmental and social cost to some residents, particularly the vulnerable at all project construction stages. Effective road infrastructure development requires more than just engineering expertise it requires a deep understanding of and responsiveness to the human and environmental context in which it occurs. Future projects must adopt a holistic, inclusive, and equitable approach that balances development with sustainability and social justice. Only then can infrastructure development truly serve as a catalyst for long term, inclusive growth.

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Uganda Martyrs University

making a difference

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Email: sassadmin@umu.ac.ug

Nkozi, 7th May, 2025

Your ref:
Our ref: ma pt introduction letter 24-25

Dear Sir / Madam,

Ref: Letter of Introduction.

This is to introduce to you **NABIRYE Evelyn Zikusooka Reg. No. 2023-M092-21436** who is a postgraduate student in the Department of Development Studies at Uganda Martyrs University - Nkozi. She is required to carry out research on the topic:

"Investigating the Effects of Infrastructure Development on the Communities of Kiira-Kasangati-Matuggu Road Project."

This is a requirement for the award of a Masters Degree in Development Studies.

I would like to request you to render her assistance in collecting the necessary data for writing her Dissertation.

Thanking you in advance for your assistance.

Yours Sincerely,

UGANDA MARTYRS UNIVERSITY 07 MAY Dean's Office School of Arts and Social Sciences

Rev. Fr. Dr. PETER Celestine Safari
Dean

Structured Questionnaire (for Household or Community Members Quantitative Tool) FOR KIIRA -KASANGATI-MATUGGA.

Introduction:

Good morning! My name is Nabirye Evelyn Zikusooka, and I am a postgraduate student at Uganda Martyrs University. I am conducting a research study as part of my dissertation titled *"Investigating the Effects of Road Infrastructure Development on the Communities of the Kiira-Kasangati-Matugga Road Project."*The purpose of this questionnaire is to understand how the road project has affected local communities socially, economically, and environmentally before, during, and after construction. Your responses will help inform future road development projects to be more inclusive and community friendly. Please note that all the information you share will be kept confidential and used for academic purposes only. You are free to skip any question you're not comfortable with, and you may stop the interview at any time. The questionnaire should take about 20–30 minutes. May I proceed?

Interviewers Bio Data

Name of interviewer.....

Date of interview.....

Start time.....End time.....

Location details of informant.

District	Municipality	Sub-County	Town Council	Division	Parish/Ward	Village / LC I

Section A: Background Information (Interviewee)

1. Gender:

   a) Male

   b) Female

2. Age: .....
3. Telephone number.....
4. Occupation: .....
5. Education level:
   a) None
   b) Adult functional literacy.
   c) Primary
   d) Secondary
   e) Tertiary
   f) University
   g) Post graduate
   h) Others.....Specify
6. Are you a property owner?

   a) Yes □

   b) No □

7. If yes, what do you own?
   a) Residential building
   b) Commercial building
   c) Land
   d) Kiosk
   e) Others.....Specify
8. If no, what are you?
   a) Tenant □
   b) Other....specify.
9. How long have you stayed in this area: ___ years.

10. Why did you settle in this area?

a) Closer to work
b) Suitable for business
c) Safety
d) Amenities and social services
e) Social networks
f) Others.....Specify

Section B: Awareness and Experience with the Road Project

11. Were you aware of the Kiira-Kasangati-Matuuga road project before, during and its construction?

a) Yes □

b) No □

12. Did you or your household experience any of the following before road construction? (tick all that apply)

a) Displacement

b) Loss of property or land

c) Family conflicts/break up

d) Disruption to business

e) inadequate compensation

d) None

f) others.....specify

13. Did you or your household experience any of the following during road construction? (tick all that apply)

a) Displacement
b) Dust/pollution
c) Noise
d) Loss of property or land

e) Disruption to business

f) Gender based violence

g) Family breakups

h) None

i) Others specify

14. Did you or your household experience any of the following after road construction? (tick all that apply)

a) Displacement

b) Dust/pollution

c) Noise

d) Loss of property or land

e) Disruption to business

f) None

g) others.....Specify

Section C: Social Effects

15. How would you describe your access to social services (schools, hospitals) after the road construction?

a) Greatly Improved

b) Improved

c) No Change

d) Worsened

16. Have there been any changes in community relationships or social interactions?

a) Yes □

b) No □

If yes, please specify: _____

Section D: Economic Effects

17. How has the road affected your source of income or business?

Before road construction

a) Improved

b) No change

c) Made it worse

During road construction

a) Improved

b) No change

c) Made it worse

After road construction.

a) Improved

b) No change

c) Made it worse

18. Have new businesses opened in your area since the road was completed?

a) Yes □

b) No □

19. What challenges (if any) have you faced in earning a living since the road project?

.....

Section E: Environmental Effects

20. Did you notice any environmental changes before, during or after the road construction?

a) Increased pollution

b) Flooding

c) Deforestation

d) noise

e) None

f) Others .....Specify

21. Are these changes affecting your daily life?

1) Yes □ .....if yes how.....

2) No □ .....if no how.....

Section F: Coping Strategies and Recommendations

22. How have you and your family adapted to the road development impacts? If any.....

23. What would you recommend to government/planners for future road projects? .....

END

THANK YOU.

Focus Group Discussion Guide (Community Members ,Qualitative Tool) for Kiira-Kasangati-Matugga Road project.

FGD Composition:

Mix of gender, age, occupation (e.g., youth group, traders, elders, women's group)

6–10 participants per group.

Introduction:

Good morning/afternoon everyone, and thank you for joining us today. My name is Nabirye Evelyn Zikusooka, a postgraduate student at Uganda Martyrs University. I am carrying out research on the *Kiira-Kasangati-Matugga Road Project*, particularly how it has affected communities like yours socially, economically, and environmentally throughout its different stages.

This group discussion is part of the study, and we would love to hear your opinions, experiences, and ideas. There are no right or wrong answers we are only interested in your honest views.

What you share here will remain confidential and only be used for academic purposes. Please feel free to speak openly, and you may choose not to answer any question if you are uncomfortable.

The discussion will take about one hour. With your consent, may we go ahead?

Facilitator guide:

1. Let's start with how life was before the road construction. What was transport like?
2. What were your expectations when you heard about the project?
3. Before, during and after construction, what changes did you notice in your daily life?
4. What challenges did you or others face? (at all phases of construction).
5. How has the completed road affected your life today? (access, jobs, safety, etc.)
6. Has anyone here experienced displacement or loss of land/property or any other?

7. What environmental issues did you notice during/after the project?
8. Have there been any changes in your community relationships or behaviour?
9. How did you (or others) cope with these changes?
10. If another road project was planned here, what would you want done differently?

Key Informant Interview Guide (for Local Leaders, Project Engineers, town clerks, Environmentalists, sociologists). For Kiira Kasangati - Matugga Road Project.

Introduction:

Good morning/afternoon. Thank you for taking the time to meet with me. My name is Nabirye Evelyn Zikusooka, a Master's student from Uganda Martyrs University. I am conducting a study as part of my dissertation, focusing on the Kiira-Kasangati-Matugga Road Project and its social, economic, and environmental effects on the surrounding communities.

As someone with expert knowledge and involvement in infrastructure, your insights are vital to helping us understand both the successes and the challenges experienced during the project lifecycle.

This discussion is voluntary, and you may choose not to answer any question. All information will be treated confidentially and will be used strictly for academic purposes. The interview will take about 30–45 minutes. With your permission, may we begin?

Questions:

1. What is/ was your role or involvement in the Kiira-Kasangati-Matuuga Road project?
2. How would you describe the community's participation or consultation in the planning phase?
3. What were the most prominent challenges observed?

    - Before construction

- during construction

-After construction

4. From your perspective, what have been the key benefits of the road to the affected communities and the surrounding population? (At all stages of construction)
5. Were any groups (e.g., women, youth, traders) more affected than others? How?
6. How were environmental concerns (e.g., land degradation, pollution) addressed?
7. Were there any resettlement or compensation mechanisms put in place? Were they adequate?
8. How do you think the road has influenced urban growth or migration in this region?
9. What lessons were learned, and how can they inform future road infrastructure projects?
10. What recommendations do you have for inclusive and sustainable road development?

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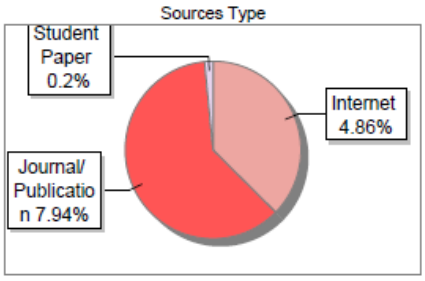

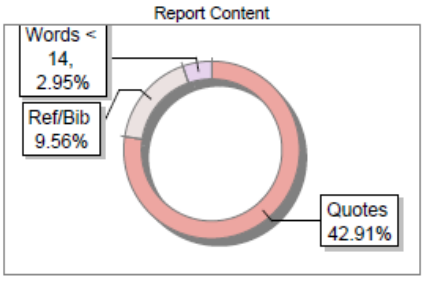

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