

MAKERERE



UNIVERSITY

**REGIONAL DIFFERENTIALS IN THE DETERMINANTS OF
EDUCATION ATTAINMENT IN KARAMOJA AND KAMPALA,
UGANDA: EVIDENCE FROM THE 2024 NATIONAL
POPULATION AND HOUSING CENSUS**

BY

AINERUGABA MUHOOZI

2300705394

23/U/05394/PS

BPOP

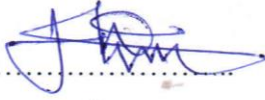
**A DISSERTATION SUBMITTED TO THE SCHOOL OF STATISTICS
AND PLANNING IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE
OF BACHELOR OF SCIENCE IN POPULATION
STUDIES AT MAKERERE UNIVERSITY**

JUNE 2026

DECLARATION

I, AINERUGABA MUHOOZI, declare that this dissertation is my original work and has not been submitted to any other institution of higher learning for the award of a degree or any other academic qualification. All sources of information from other authors, literature, or works have been duly acknowledged and referenced.

Signature.....



Date.....

29th 06/ 2026

2300705394

23/U/05394/PS

APPROVAL

I, the undersigned certify that Ainerugaba Muhoozi carried out his undergraduate research under my supervision. I hereby pronounce that his dissertation is ready and has been submitted with my approval.

Signature.....

Date.....

Peninah Agaba (PHD)

Lecturer, Department of population studies

School of statistics and planning, COBAMS

Makerere University, Kampala

DEDICATION

I dedicate this work to my beloved mother, who sacrificed a lot to pay my tuition and support my education; to my Aunt Jennifer, whose inspiration, guidance, and financial support encouraged me to join university and continue pursuing my studies; and to my dear fiancée, Kyobutungi Doreen, who always encouraged me, reminded me to complete my assignments and coursework on time, and continually prayed for me throughout my academic journey.

ACKNOWLEDGEMENT

I thank the Almighty God for the gift of life, good health, wisdom, and provision that enabled me to complete this course and dissertation.

I am deeply grateful to my dissertation supervisor, Dr. Agaba Peninah, for her guidance, support, encouragement, and constructive feedback throughout this study. Her supervision greatly contributed to the successful completion of this research.

I also extend my sincere appreciation to all my lecturers for the knowledge, skills, and academic guidance they provided throughout the course. Their teaching and mentorship greatly contributed to my academic growth.

I am thankful to my coursemates for their support, encouragement, teamwork, and shared learning experiences throughout the programme. Their cooperation made the academic journey meaningful and manageable.

I also extend my sincere appreciation to my friends, Ssebunya Vincent, Aron Mugabi, and Oola David, for the late-night discussions, academic support, and encouragement throughout the course.

Special appreciation goes to the Uganda Bureau of Statistics (UBOS) for granting me access to and permission to use the 2024 National Population and Housing Census data for this research.

TABLE OF CONTENTS

DECLARATION.....	i
APPROVAL	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ACRONYMS	x
ABSTRACT	xi
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background to the Study.....	1
1.2 Problem Statement	3
1.3 Objectives of the study	4
1.3.1 General Objective	4
1.3.2 Specific Objectives	4
1.4 Study Hypotheses.....	5
1.5 Significance of the Study	5
1.6 Scope of the Study	6
1.6.1 Content Scope	6
1.6.2 Geographical Scope	6
1.6.3 Time Scope	6
1.7 Conceptual framework.....	6
CHAPTER TWO	9
LITERATURE REVIEW	9
2.1 Introduction.....	9
2.2 Theoretical Framework.....	9
2.2 Educational Attainment	10
2.3 Demographic Characteristics and Educational Attainment.....	11
2.3.1 Region.....	11
2.3.2 Sex.....	12
2.3.3 Age.....	12
2.3.4 Marital Status	13
2.3.5 Religion.....	13
2.3.6 Disability Status	13
2.4 Socio-Economic Characteristics and Educational Attainment	14

2.4.1 Internet Access.....	14
2.4.2 Savings Group Membership	15
2.4.3 Land Ownership.....	16
2.5 Household Characteristics and Educational Attainment.....	16
2.5.1 Household Composition.....	17
2.5.2 Sex of Household Head	17
2.6 Literature Gap	19
CHAPTER THREE	20
RESEARCH METHODOLOGY.....	20
3.0 Introduction.....	20
3.1 Research Design.....	20
3.2 Study Population	20
3.3 Data Source	20
3.4 Inclusion and Exclusion Criteria.....	21
3.4.1 Inclusion Criteria	21
3.4.2 Exclusion Criteria	21
3.5 Study Variables.....	21
3.6 Data Management	22
3.8 Data Analysis	23
3.8.1 Univariate Analysis.....	23
3.8.2 Bivariate Analysis.....	23
3.8.3 Multivariate Analysis.....	24
3.9 Ethical Considerations	24
3.10 Limitations of the Study.....	25
CHAPTER FOUR.....	26
RESULTS, FINDINGS AND ANALYSIS.....	26
4.0 Introduction.....	26
4.1 Univariate Analysis.....	26
4.2 Bivariate Analysis	28
4.3 Multivariate Analysis.....	32
CHAPTER FIVE	42
DISCUSSION, CONCLUSION AND RECOMMENDATIONS	42
5.0 Introduction.....	42
5.1 Discussion of Findings.....	38
5.1.1 Demographic Characteristics and Educational Attainment	38
5.1.2 Socio-Economic Characteristics and Educational Attainment	39
5.1.3 Household Characteristics and Educational Attainment.....	40

5.2 Conclusion	43
5.3 Recommendations.....	44
REFERENCES.....	47

LIST OF TABLES

Table 1: Description and Measurement of Study Variables	21
Table 2: Background Characteristics of Respondents by Region (N = 131,378).....	26
Table 3: Bivariate Analysis of Educational Attainment by Selected Characteristics	Error!
Bookmark not defined.	
Table 4: Ordered Logistic Regression Results for Predictors of Educational Attainment	34

LIST OF FIGURES

Figure 1.1: The Conceptual framework	8
--	---

LIST OF ACRONYMS

Acronym	Full Meaning
CI	Confidence Interval
ICT	Information and Communication Technology
NPHC	National Population and Housing Census
OR	Odds Ratio
SDG	Sustainable Development Goal
UBOS	Uganda Bureau of Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPE	Universal Primary Education
USE	Universal Secondary Education

ABSTRACT

Educational attainment is an important indicator of human capital development and socio-economic transformation. However, disparities in educational attainment remain evident across regions in Uganda, particularly between Kampala and Karamoja. Kampala is more urbanized and has better access to educational and socio-economic opportunities, while Karamoja continues to face development challenges that may limit educational progression. This study examined regional differentials in the determinants of educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions of Uganda, using data from the 2024 National Population and Housing Census.

A cross-sectional analytical research design was adopted. The study population comprised 131,378 respondents aged 25 years and above, of whom 80,692 (61.4%) were from Kampala and 50,686 (38.6%) were from Karamoja. Secondary data were analyzed using univariate, bivariate, and multivariate techniques. Frequencies and percentages were used to summarize respondents' characteristics, chi-square tests were used to examine associations between educational attainment and selected explanatory variables, and ordered logistic regression was used separately for Kampala and Karamoja to identify independent predictors of educational attainment.

The findings revealed substantial regional disparities in educational attainment between Kampala and Karamoja. In Karamoja, 77.5% of respondents had no formal education compared to 11.3% in Kampala. In contrast, Kampala had higher proportions of respondents with secondary education (40.7%), post-secondary education (25.3%), and university education (4.8%) compared to Karamoja, where only 7.7%, 3.7%, and 0.4% had attained these levels, respectively. In the multivariate analysis, sex, age group, marital status, internet access, savings group membership, household composition, sex of household head, and education level of household head were significant predictors of educational attainment in both regions after controlling for other factors.

The study concludes that educational attainment in Kampala and Karamoja is influenced by a combination of demographic, socio-economic, and household factors. Regional disparities remain substantial, with Karamoja experiencing lower levels of educational attainment than Kampala. The study recommends targeted educational interventions in Karamoja, expansion of digital access, strengthening of household economic support, promotion of adult literacy,

and support for disadvantaged households in order to reduce regional inequalities in educational attainment.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Education is widely recognized as a fundamental driver of human capital development, economic growth, and social transformation. It equips individuals with the knowledge, skills, and competencies required to participate effectively in economic, social, and political activities. Educational attainment, defined as the highest level of education successfully completed by an individual, is a key indicator of socio-economic development because it influences employment opportunities, income levels, health outcomes, and overall quality of life. Consequently, improving access to education and ensuring equitable educational outcomes remain central priorities in global development agendas, particularly Sustainable Development Goal 4, which seeks to ensure inclusive and equitable quality education for all (UBOS, 2024; UNESCO, 2024).

Globally, significant progress has been made in expanding access to education over the past few decades. However, disparities in educational attainment continue to persist across regions, sexes, socio-economic groups, and household backgrounds. Research has consistently shown that educational attainment is influenced by a combination of demographic, socio-economic, and household factors, including age, sex, place of residence, household wealth, parental education, and access to information and communication technologies (Psacharopoulos & Patrinos, 2018). Individuals from economically advantaged households are generally more likely to attain higher levels of education than those from disadvantaged backgrounds because they possess greater access to educational resources and opportunities.

In Sub-Saharan Africa, educational inequalities remain a major development challenge despite substantial investments in the education sector. Although many countries have implemented policies aimed at expanding access to education, disparities in educational attainment continue to exist between urban and rural populations, males and females, and different socio-economic groups. Household poverty, low parental education, large family sizes, and inadequate access to educational facilities remain important barriers to educational progression and completion in many countries across the region (Lehrer, 2004; UNESCO, 2024). These challenges are particularly evident in marginalized and historically disadvantaged communities where educational infrastructure and economic opportunities remain limited.

Uganda has made considerable progress in improving access to education through major policy initiatives such as UPE, introduced in 1997, and USE, introduced in 2007. These interventions significantly increased school enrolment and expanded educational opportunities across the country. Despite these achievements, educational attainment remains unevenly distributed across regions and population groups. Evidence from national surveys and census reports indicates that educational outcomes continue to vary by demographic, socio-economic, and household characteristics, including sex, age, disability status, household wealth, parental education, and place of residence (UBOS, 2024). Consequently, disparities in educational attainment remain a concern for policymakers and development practitioners.

Regional differences in educational attainment are particularly pronounced in Uganda. Kampala, the country's capital city and most urbanized region, benefits from relatively better educational infrastructure, higher household incomes, improved access to information technologies, and greater employment opportunities. In contrast, Karamoja remains one of the least developed regions in the country and continues to experience high poverty levels, low literacy rates, limited educational infrastructure, and socio-economic challenges associated with its predominantly pastoral livelihood system. Studies have shown that Karamoja consistently records lower educational indicators than most other regions of Uganda due to a combination of economic, cultural, and historical factors that constrain educational participation and progression (UBOS, 2024). These regional disparities highlight the need for a better understanding of the factors influencing educational attainment in different contexts.

Household characteristics also play an important role in shaping educational outcomes. Previous studies have demonstrated that household size, household structure, and the educational level of parents or household heads significantly influence educational attainment. Individuals from households headed by educated persons are more likely to attain higher levels of education due to increased awareness of the benefits of schooling and greater investment in educational opportunities. Similarly, larger households may face greater competition for limited resources, thereby reducing investments in education and affecting educational progression (Fairlie, 2012; Mizunoya et al., 2018). These findings suggest that household conditions are important determinants of educational attainment.

In recent years, socio-economic factors such as internet access, financial inclusion, and ownership of productive assets have emerged as important influences on educational attainment. Access to the internet facilitates learning, communication, and access to educational materials, while participation in savings groups and ownership of assets such as land reflect household economic capacity and resilience. Studies have shown that access to digital technologies and financial resources is positively associated with educational attainment because they enhance access to learning opportunities and reduce financial barriers to education (Escueta et al., 2020). As digital technologies become increasingly integrated into education systems, understanding their influence on educational outcomes has become more important.

Although several studies have examined educational attainment in Uganda, much of the available evidence is based on older survey data and often focuses on national-level trends, thereby masking important regional differences. Furthermore, limited empirical evidence exists on how demographic, socio-economic, and household factors jointly influence educational attainment in regions with contrasting socio-economic conditions such as Kampala and Karamoja. The availability of data from the 2024 National Population and Housing Census provides an opportunity to generate updated evidence on the determinants of educational attainment using a large and nationally representative dataset. Such evidence is essential for informing policies and interventions aimed at reducing educational inequalities and promoting inclusive human capital development in Uganda.

1.2 Problem Statement

Education is widely recognized as a fundamental driver of human capital development, poverty reduction, and socio-economic transformation. It enhances individuals' productivity, improves employment opportunities, and contributes to national development. Consequently, equitable access to education and the attainment of higher levels of education are central to achieving Sustainable Development Goal 4, which seeks to ensure inclusive and equitable quality education for all (UN, 2015). In Uganda, government initiatives such as UPE and USE were introduced to increase access to education and reduce disparities in educational outcomes across different population groups and regions (UBOS, 2024).

Despite these interventions, significant disparities in educational attainment continue to exist across Uganda. Recent census statistics indicate that educational outcomes remain unevenly distributed across regions, with Kampala consistently recording higher levels of educational

attainment than Karamoja. Such disparities are further reflected across demographic, socio-economic, and household characteristics including sex, age, disability status, access to internet services, household economic resources, household size, and the educational level of household heads. Previous studies have shown that individuals from disadvantaged households and marginalized regions are less likely to attain higher levels of education, thereby perpetuating cycles of poverty and inequality (Psacharopoulos & Patrinos, 2018; UBOS, 2024).

Although several studies have examined educational attainment in Uganda, much of the available evidence is based on older survey data and national-level analyses that often conceal important regional differences. Consequently, there is limited recent evidence on how demographic, socio-economic, and household factors influence educational attainment across regions with contrasting development contexts such as Kampala and Karamoja. Using data from the 2024 National Population and Housing Census, this study seeks to fill this gap by examining the factors associated with educational attainment and the extent to which they contribute to regional disparities. The findings will provide evidence to inform policies and interventions aimed at promoting equitable educational opportunities and reducing regional inequalities in Uganda.

1.3 Objectives of the study

1.3.1 General Objective

To examine the determinants of educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions using data from the 2024 National Population and Housing Census.

1.3.2 Specific Objectives

- i. To assess the influence of demographic characteristics on educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions.
- ii. To examine the relationship between socio-economic characteristics and educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions.
- iii. To determine the influence of household characteristics on educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions.

1.4 Study Hypotheses

- i. Educational attainment does not differ significantly between Kampala and Karamoja regions.
- ii. Sex is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region
- iii. Age group is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region
- iv. Marital status is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region
- v. Religion is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region
- vi. Disability status is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region
- vii. Internet access is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region
- viii. Savings group membership is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region
- ix. Land ownership is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region
- x. Household composition is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region
- xi. Sex of household head is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region
- xii. Education level of household head is not significantly associated with educational attainment among individuals aged 25 years and above in Kampala and Karamoja region

1.5 Significance of the Study

This study will provide valuable insights into the factors influencing educational attainment in Uganda by examining the role of demographic, socio-economic, and household characteristics in Kampala and Karamoja regions. The findings will generate evidence that can support policymakers, education planners, government agencies, and development partners in designing targeted interventions aimed at reducing educational inequalities and improving access to education among disadvantaged populations. In addition, the study will

contribute to the existing body of knowledge on educational attainment and regional disparities in Uganda by providing recent empirical evidence from the 2024 National Population and Housing Census. The findings will also serve as a useful reference for researchers, students, and other stakeholders interested in education, population studies, and socio-economic development, while providing a foundation for future research on educational inequalities and their determinants.

1.6 Scope of the Study

1.6.1 Content Scope

The study will examine the determinants of educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions. It will focus on how demographic, socio-economic, and household characteristics influence the level of education attained by individuals. The study will consider educational attainment as the main outcome and will assess how differences in personal characteristics, access to socio-economic resources, and household background contribute to variations in education outcomes.

1.6.2 Geographical Scope

The study will be conducted in the Kampala and Karamoja regions of Uganda. These regions will be selected because they represent contrasting socio-economic and educational contexts, with Kampala being the most urbanized region and Karamoja being among the least developed regions in the country.

1.6.3 Time Scope

The study will utilize data from the 2024 National Population and Housing Census conducted by the Uganda Bureau of Statistics. The analysis will therefore be based on information collected during the 2024 census period.

1.7 Conceptual framework

The conceptual framework assumes that educational attainment is influenced by demographic, socio-economic, and household characteristics. However, these relationships are expected to vary across regions due to differences in levels of development, access to educational opportunities, economic conditions, and social contexts. Therefore, region (Kampala or Karamoja) is treated as a contextual factor that may shape the influence of demographic, socio-economic, and household characteristics on educational attainment.

Educational attainment, measured as the highest level of education attained, constitutes the dependent variable of the study.

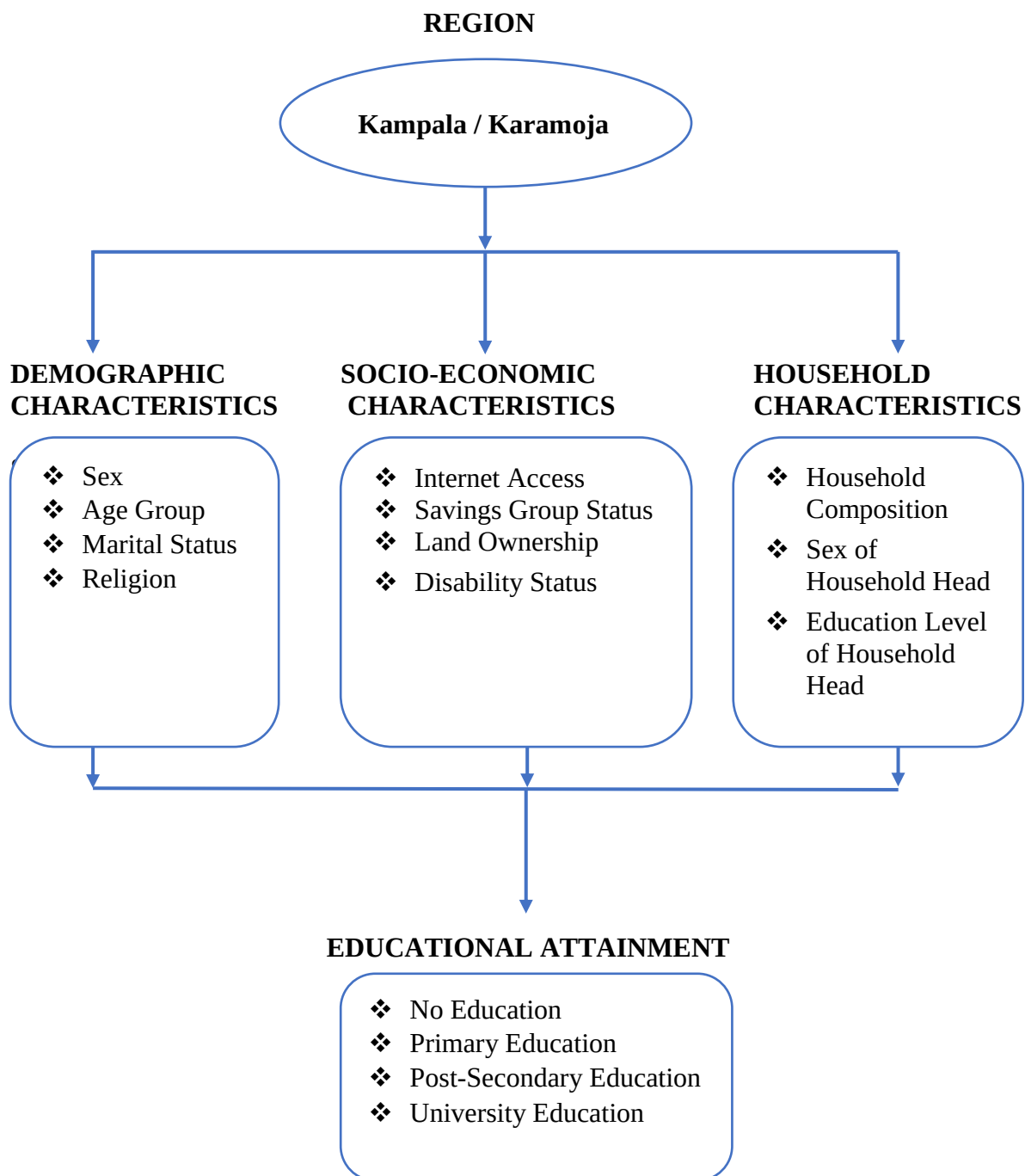


Figure 1.1: The Conceptual framework

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature related to educational attainment and its determinants. The review focuses on theoretical and empirical studies examining the influence of demographic, socio-economic, and household characteristics on educational attainment. It further explores evidence on regional disparities in educational outcomes, with particular attention to developing countries and Uganda. The chapter also presents the theoretical framework underpinning the study, identifies gaps in the existing literature, and highlights how the current study seeks to contribute to knowledge on the determinants of educational attainment in Kampala and Karamoja regions.

2.2 Theoretical Framework

This study will be guided by the Human Capital Theory developed by Gary Becker (1964). The theory views education as an investment that enhances the knowledge, skills, and competencies of individuals, thereby increasing their productivity and economic potential. According to the theory, individuals, households, and societies invest in education because the benefits derived from educational attainment, such as higher earnings, improved employment opportunities, and better living standards, outweigh the associated costs.

Human Capital Theory suggests that educational attainment is influenced by the resources available to individuals and households. Factors such as household economic status, parental education, access to information, and household characteristics determine the ability of individuals to access and progress through the education system. Consequently, individuals from households with greater economic and social resources are more likely to attain higher levels of education than those from disadvantaged backgrounds.

The theory is relevant to this study because it provides a framework for understanding how demographic, socio-economic, and household characteristics influence educational attainment. Variables such as internet access, savings group membership, land ownership, household composition, sex of household head, and education level of household head reflect the resources and opportunities available to individuals for educational advancement. Similarly, regional differences between Kampala and Karamoja may influence educational attainment through variations in access to educational facilities, economic opportunities, and household resources.

The Human Capital Theory therefore provides a useful basis for explaining variations in educational attainment among individuals aged 25 years and above and for understanding the regional disparities observed between Kampala and Karamoja. However, while the theory emphasizes the role of individual and household investments in education, it may not fully account for broader structural and contextual factors such as regional inequalities, cultural practices, and historical disadvantages that also influence educational outcomes.

2.2 Educational Attainment

Educational attainment refers to the highest level of formal education successfully completed by an individual. It is one of the most widely used indicators of human capital because it reflects the knowledge, skills, and competencies acquired through formal schooling and training. Educational attainment influences individuals' employment opportunities, income levels, health outcomes, social mobility, and overall quality of life. Consequently, it is frequently used by governments, researchers, and development agencies to assess educational progress and socio-economic development within populations (Escueta et al., 2020).

The importance of educational attainment extends beyond individual benefits to broader societal and economic development. Individuals with higher levels of education are more likely to secure stable employment, earn higher incomes, and participate actively in social and political processes. At the national level, higher educational attainment contributes to economic growth, technological advancement, poverty reduction, and improved public health outcomes. According to (Psacharopoulos & Patrinos, 2018), investment in education continues to generate substantial returns for both individuals and societies, making educational attainment a key determinant of development outcomes across countries.

Despite significant improvements in access to education globally, disparities in educational attainment remain evident across different population groups. Studies have shown that educational attainment is influenced by a range of demographic, socio-economic, and household factors, including sex, age, place of residence, household wealth, parental education, and access to educational resources (UNESCO, 2024). In many developing countries, inequalities in access to educational opportunities continue to affect progression to higher levels of education, particularly among disadvantaged populations.

In Uganda, educational attainment has improved following the introduction of UPE and USE. However, substantial disparities persist across regions and socio-economic groups. Evidence from national surveys and census reports indicates that individuals living in urban areas and

those from households with greater economic and educational resources generally attain higher levels of education than their counterparts from disadvantaged households and regions (UBOS, 2024). Understanding the factors associated with educational attainment is therefore important for informing policies and interventions aimed at reducing educational inequalities and promoting inclusive human capital development.

2.3 Demographic Characteristics and Educational Attainment

2.3.1 Region

Region has consistently been identified as an important determinant of educational attainment, particularly in developing countries where disparities in infrastructure, economic development, and access to social services remain pronounced. Individuals residing in urban and economically developed regions generally have better access to schools, qualified teachers, learning materials, and educational support services than those living in disadvantaged regions. As a result, regional inequalities often translate into differences in educational attainment. According to the UNESCO Global Education Monitoring Report (2024), geographical location remains one of the strongest predictors of educational participation and attainment globally, particularly in low-income countries where development is unevenly distributed.

In Sub-Saharan Africa, regional disparities in educational attainment are largely attributed to differences in economic opportunities, poverty levels, educational infrastructure, and historical patterns of development. Lewin (2015) observed that individuals living in urban regions are more likely to complete higher levels of education than those in rural and marginalized areas due to greater availability of educational resources and economic incentives for schooling. Similar findings have been reported across East Africa, where educational attainment tends to be concentrated in urban centers and economically prosperous regions.

In Uganda, regional disparities in educational attainment remain substantial despite efforts to expand access to education through UPE and USE. (UBOS, 2024) reported that central urban regions consistently record higher literacy levels and educational attainment compared to northern and north-eastern regions. Karamoja, in particular, continues to experience lower educational outcomes due to poverty, food insecurity, nomadic livelihoods, and limited educational infrastructure. In contrast, Kampala benefits from higher household incomes, better educational facilities, and improved access to information and communication

technologies. These differences suggest that region remains an important factor influencing educational attainment in Uganda.

2.3.2 Sex

Sex is one of the most widely studied demographic factors influencing educational attainment. Historically, males have had greater access to education than females in many societies due to socio-cultural norms, gender roles, and economic constraints. Although considerable progress has been made in reducing gender disparities in education, differences in educational attainment continue to exist in many developing countries. According to UNESCO (2024), gender inequalities remain evident at higher levels of education, particularly among populations experiencing poverty and social disadvantage.

Research has shown that females often face barriers such as early marriage, teenage pregnancy, domestic responsibilities, and cultural expectations that may limit their educational progression. A study by Nguyen and Wodon (2014) found that child marriage significantly reduces educational attainment among girls in developing countries. Similarly, Sperling and Winthrop (2016) argued that socio-cultural factors continue to constrain educational opportunities for women despite improvements in school enrolment.

2.3.3 Age

Age is an important determinant of educational attainment because it reflects differences in educational opportunities available to different generations. Educational attainment often varies across age cohorts due to changes in education policies, economic conditions, and access to schooling over time. Younger generations generally benefit from improved educational infrastructure and expanded educational opportunities compared to older generations.

Studies have consistently found that younger individuals are more likely to attain higher levels of education than older individuals, particularly in developing countries that have experienced educational expansion. According to Barro and Lee (2013), educational attainment has increased significantly across successive generations due to investments in education and improvements in access to schooling. Older age cohorts often exhibit lower educational attainment because they were exposed to less favorable educational conditions during their school-going years.

2.3.4 Marital Status

Marital status has been widely associated with educational attainment because it influences individuals' educational aspirations, economic responsibilities, and opportunities for continued learning. Educational attainment may affect marital decisions, while marital status may also influence educational progression, particularly among young adults.

Research has shown that individuals with higher levels of education tend to delay marriage and are more likely to pursue further education before entering marital unions. According to Blossfeld (2009), education influences the timing of marriage by increasing aspirations for career development and economic stability. Conversely, early marriage has been associated with school dropout and lower educational attainment, particularly among women in developing countries.

2.3.5 Religion

Religion has long been recognized as a factor that may influence educational attainment through cultural values, social norms, and institutional support for education. Religious organizations have historically played a significant role in the establishment and management of educational institutions, particularly in developing countries. Studies have shown that religious affiliation may influence attitudes toward education, educational aspirations, and access to educational resources.

(Karlan et al., 2014) found that religious communities often shape educational outcomes through social capital, moral values, and support networks. Religious institutions may also contribute directly to educational attainment by establishing schools and promoting literacy. Religious organizations have historically contributed significantly to educational development through the establishment of schools and other educational institutions in Uganda. However, educational outcomes may vary across religious groups due to differences in socio-economic conditions, cultural practices, and geographical distribution.

2.3.6 Disability Status

Disability status is an important determinant of educational attainment because individuals with disabilities often face barriers to accessing and completing education. These barriers may include physical inaccessibility, inadequate learning materials, discrimination, and limited institutional support. Consequently, persons with disabilities frequently experience lower educational attainment than those without disabilities.

According to the World Health Organization (2023), individuals with disabilities are less likely to complete higher levels of education due to persistent barriers within educational systems. Similar findings have been reported by Mizunoya et al. (2018), who found that children and adults with disabilities consistently exhibit lower educational attainment across many low- and middle-income countries. Persons with disabilities continue to face challenges in accessing quality education despite policies promoting inclusive education. Limited educational facilities, inadequate assistive technologies, and social stigma often hinder educational progression among individuals with disabilities.

2.4 Socio-Economic Characteristics and Educational Attainment

Socio-economic characteristics play a critical role in shaping educational attainment by influencing individuals' access to educational opportunities, learning resources, and the financial capacity required to pursue and complete formal education. The Human Capital Theory posits that investments in education are often determined by the resources available to individuals and households, making socio-economic conditions an important determinant of educational outcomes (Becker, 1964) . Previous studies have consistently shown that access to economic resources, information, and social support systems significantly affects educational progression and attainment across different populations.

In developing countries, socio-economic inequalities often translate into disparities in educational attainment. Individuals from economically advantaged households are generally more likely to attain higher levels of education due to their ability to afford school-related costs and access educational resources. Conversely, limited access to information, financial services, and productive assets may constrain educational opportunities and progression. This section reviews literature on the relationship between internet access, savings group membership, land ownership, and educational attainment.

2.4.1 Internet Access

Internet access has become an increasingly important determinant of educational attainment in the digital era. The internet facilitates access to educational materials, online learning platforms, research resources, and communication technologies that support learning and academic achievement. According to the UNESCO Global Education Monitoring Report (2024), digital connectivity has become a critical factor in enhancing educational opportunities and reducing information inequalities. Individuals with internet access are often

better positioned to acquire knowledge, develop skills, and pursue higher levels of education than those without access.

Several studies have reported a positive relationship between internet access and educational outcomes. Fairlie (2012) found that access to digital technologies improves educational performance and increases opportunities for learning among students. Similarly, Escueta et al. (2020) reported that access to online educational resources can enhance learning outcomes when combined with appropriate support systems. However, disparities in internet access continue to contribute to educational inequalities, particularly in developing countries where digital infrastructure remains limited.

In Uganda, internet penetration remains uneven across regions and socio-economic groups. Urban areas such as Kampala generally have greater access to internet services than rural and marginalized regions. Limited internet access may therefore constrain educational opportunities, particularly for individuals seeking information, educational resources, and opportunities for further learning. As digital technologies become increasingly integrated into education systems, internet access is expected to play an important role in influencing educational attainment.

2.4.2 Savings Group Membership

Savings groups are community-based financial organizations that enable members to save money, access credit, and strengthen their financial resilience. Participation in savings groups has been associated with improved household welfare, increased investment in education, and enhanced access to economic opportunities. Savings groups often provide financial resources that can be used to support educational expenses such as school fees, learning materials, and transportation costs.

Research has shown that access to financial services contributes positively to educational outcomes by reducing financial barriers to schooling. (Karlan et al., 2014) observed that households with access to financial services are more likely to invest in education and human capital development. Similarly, (Dupas & Robinson, 2013) found that participation in savings programs improves household investment decisions, including expenditures related to education. Savings groups may therefore facilitate educational attainment by improving household financial stability and increasing the capacity to invest in education.

2.4.3 Land Ownership

Land ownership is widely regarded as an important indicator of household wealth and economic security, particularly in developing countries where agriculture remains a major source of livelihood. Ownership of productive assets such as land provides households with economic resources that can be invested in education and other forms of human capital development. Households with secure land ownership are generally better positioned to finance educational expenses and support educational progression.

Previous studies have documented a positive relationship between household wealth and educational attainment. (Filmer & Pritchett, 2001) found that asset ownership is strongly associated with educational outcomes in developing countries, with wealthier households exhibiting higher levels of educational attainment. Similarly, (Handa, 2002) reported that household asset ownership significantly influences educational participation and school completion. Land ownership may therefore contribute to educational attainment through its effects on household income, economic stability, and access to financial resources. Land remains one of the most important economic assets, particularly in rural areas where agriculture is the dominant economic activity. In Uganda, Households that own land often possess greater economic security and may have a greater capacity to invest in education compared to landless households. However, the relationship between land ownership and educational attainment may vary depending on the size, productivity, and utilization of the land.

2.5 Household Characteristics and Educational Attainment

Household characteristics are important determinants of educational attainment because they shape the social, economic, and learning environment within which individuals grow and acquire education. The household serves as the primary unit through which resources are allocated and educational decisions are made. Factors such as household size, household structure, characteristics of the household head, and parental educational background influence access to educational opportunities, educational aspirations, and progression through the education system. Previous studies have consistently shown that household conditions significantly affect educational outcomes, particularly in developing countries where family resources play a crucial role in supporting educational attainment (Buchmann & Hannum, 2001).

The influence of household characteristics on educational attainment can be explained through the availability of economic resources, parental support, and educational expectations within the family. Households with adequate resources and educated household heads are generally better positioned to invest in education and provide an environment conducive to learning. Conversely, resource constraints, large household sizes, and low parental education may limit educational opportunities and attainment. This section reviews literature on the relationship between household composition, sex of household head, education level of household head, and educational attainment.

2.5.1 Household Composition

Household composition, particularly household size, has been widely associated with educational attainment. Household size influences the distribution of economic and social resources among household members and may affect the ability of households to invest in education. Larger households often face greater financial pressures due to increased consumption needs, which may reduce the resources available for educational expenditures such as tuition, learning materials, and transportation.

The resource dilution theory suggests that as household size increases, the resources available per household member decline, potentially affecting educational outcomes (Downey, 1995). Several empirical studies have supported this argument. For example, (Blossfeld, 2009; Lloyd & Blanc, 1996) found that children from larger households tend to attain lower levels of education due to competition for limited household resources. Similarly, (De Haan, 2010) reported that large household sizes are associated with reduced educational attainment in many developing countries. Large households may face challenges in financing education for all members, especially where household incomes are limited. Consequently, individuals from smaller households are often expected to attain higher levels of education than those from larger households due to greater access to household resources and educational support.

2.5.2 Sex of Household Head

The sex of the household head has been identified as an important household characteristic influencing educational outcomes. Differences in access to economic resources, employment opportunities, and decision-making authority between male-headed and female-headed households may affect educational investments and attainment. Household heads often determine how household resources are allocated, including investments in education.

Research on the relationship between the sex of the household head and educational attainment has produced mixed findings. Some studies suggest that female-headed households may face greater economic constraints due to lower income levels and limited access to productive resources, which may negatively affect educational outcomes (United Nations, 2020). Conversely, other studies have found that female-headed households often prioritize investments in children's education and welfare, leading to improved educational outcomes despite economic challenges (Lloyd & Blanc, 1996). Female-headed households are more likely to experience economic vulnerability compared to male-headed households in Uganda. However, educational outcomes may vary depending on household resources, employment status, and access to social support

2.5.3 Education Level of Household Head

The education level of the household head is one of the strongest predictors of educational attainment reported in the literature. Educated household heads are more likely to appreciate the value of education, support educational participation, and allocate resources toward educational investments. They are also better positioned to guide and motivate household members in pursuing higher levels of education.

According to Human Capital Theory, educational attainment can be transmitted across generations through investments in education and the transfer of knowledge and skills within households (Becker, 1964). Numerous studies have demonstrated a strong positive relationship between parental or household head education and educational attainment. For example, (Haveman & Wolfe, 1995) found that children from households headed by more educated individuals consistently attain higher levels of education than those from less educated households. Similarly, (Black et al., 2005) reported that parental education significantly influences educational achievement and progression.

Evidence from Sub-Saharan Africa also indicates that the educational level of household heads is a major determinant of educational attainment. Huisman and Smits (2009) found that children from households headed by educated individuals are more likely to remain in school and progress to higher levels of education. In Uganda, household heads with higher levels of education are generally associated with improved educational outcomes because they possess greater awareness of the benefits of education and are often better able to provide educational support. Consequently, the education level of the household head is expected to have a positive influence on educational attainment.

2.6 Literature Gap

Although previous studies have established that educational attainment is influenced by demographic, socio-economic, and household factors such as sex, age, region, disability status, household size, parental education, household wealth, and access to information, several gaps remain in the existing literature. Much of the available evidence in Uganda is based on older survey data and often focuses on specific determinants of educational attainment rather than examining the combined influence of demographic, socio-economic, and household characteristics. Furthermore, limited studies have specifically compared educational attainment between regions with contrasting socio-economic and developmental contexts such as Kampala and Karamoja. Consequently, there remains insufficient recent and comprehensive evidence on the factors driving regional disparities in educational attainment in Uganda. This study seeks to address this gap by utilizing data from the 2024 National Population and Housing Census to examine the determinants of educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions, thereby providing current evidence to inform policies and interventions aimed at reducing educational inequalities and promoting equitable human capital development.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

This chapter presents the methodology that will be used to achieve the objectives of the study. It describes the research design, data source, study population, study variables, data management and analysis procedures. The chapter also outlines the statistical techniques that will be employed to examine the determinants of educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions using data from the 2024 National Population and Housing Census.

3.1 Research Design

The study will adopt a cross-sectional analytical research design using secondary data obtained from the 2024 National Population and Housing Census conducted by the Uganda Bureau of Statistics. A cross-sectional design is appropriate because the data were collected at a single point in time and provide information on the demographic, socio-economic, household, and educational characteristics of the population. The design will enable the examination of associations between educational attainment and selected explanatory variables among individuals aged 25 years and above in Kampala and Karamoja regions. Furthermore, the design is suitable for identifying factors associated with educational attainment and comparing educational outcomes across regions using a large nationally representative dataset.

3.2 Study Population

The study population will comprise all individuals aged 25 years and above enumerated in the 2024 National Population and Housing Census in Kampala and Karamoja regions. Individuals aged 25 years and above will be considered because they are expected to have completed their formal education and therefore provide a more accurate measure of educational attainment. According to the study dataset, a total of 131,378 respondents met this criterion and will constitute the population for analysis. This population will provide an appropriate basis for examining the demographic, socio-economic, and household factors associated with educational attainment in the two regions.

3.3 Data Source

The study will utilize secondary data obtained from the 2024 National Population and Housing Census conducted by the Uganda Bureau of Statistics. The census provides

comprehensive information on the demographic, socio-economic, and household characteristics of the Ugandan population and is the most recent nationally representative source of population data. For this study, data for individuals aged 25 years and above from Kampala and Karamoja regions will be extracted and analyzed. The use of census data provides a large sample size and enhances the reliability and generalizability of the study findings.

3.4 Inclusion and Exclusion Criteria

3.4.1 Inclusion Criteria

The study will include all individuals aged 25 years and above who were enumerated during the 2024 National Population and Housing Census and whose records contain information on educational attainment and the selected explanatory variables.

3.4.2 Exclusion Criteria

Individuals below 25 years of age and records with missing information on educational attainment will be excluded from the analysis. Respondents from regions other than Kampala and Karamoja will also be excluded from the study.

3.5 Study Variables

Table 1: Description and Measurement of Study Variables

Variable Category	Variable	Measurement/Categories	Scale of Measurement
Dependent Variable	Educational Attainment	No Education	Ordinal
		Primary Education Secondary Education Post-Secondary Education University Education	
Demographic Characteristics	Region	Kampala Karamoja	Nominal
	Sex	Male Female	Nominal
	Age Group	25–34	Ordinal
		35–44	
		45–54	
		55–64	
	Marital Status	65+ years	Nominal
		Cohabiting	
		Married	
	Religion	Never Married Previously Married	Nominal
		Anglican	

Socio-Economic Characteristics		Born Again	
		Catholic	
		Muslim	
		Other	
	Disability Status	Has Disability	Nominal
		No Disability	
	Internet Access	Yes	Nominal
		No	
		Don't Know	
	Savings Group Membership	Yes	Nominal
		No	
		Don't Know	
	Land Ownership	Yes Alone	Nominal
		Yes Jointly	
		Yes, Both Alone and Jointly	
		Doesn't Own	
		Don't Know	
Household Characteristics	Household Composition	Small Household (1–4 persons)	Ordinal
		Medium Household (5–8 persons)	
		Large Household (9+ persons)	
		Don't Know	
	Sex of Household Head	Male	Nominal
		Female	
	Education Level of Household Head	No Education	Ordinal
		Primary	
		Secondary	
		Post-Secondary	
		University	

Source: Adapted from the 2024 National Population and Housing Census dataset.

3.6 Data Management

The census dataset will be obtained in electronic format and imported into R software for processing and analysis. Data management will involve cleaning, coding, recoding, and validation to ensure completeness, consistency, and accuracy of the dataset. Respondents below 25 years of age and records that do not meet the inclusion criteria will be excluded from the analysis. Variables will be recoded into appropriate categories to facilitate analysis, including educational attainment, age groups, household composition, and other explanatory variables. The cleaned dataset will then be checked for missing values, inconsistencies, and outliers before analysis. All data will be stored securely on a password-protected computer, and confidentiality will be maintained throughout the study.

3.8 Data Analysis

Data analysis will be conducted using R software. The analysis will be performed at three levels: univariate, bivariate, and multivariate analysis.

3.8.1 Univariate Analysis

Univariate analysis will be conducted to describe the characteristics of the study population. Frequencies and percentages will be generated for all study variables, including demographic, socio-economic, household, and educational attainment variables. The results will be presented using tables and descriptive summaries.

3.8.2 Bivariate Analysis

The Pearson Chi-square test of independence will be used at the bivariate level to assess the association between educational attainment and each explanatory variable. The bivariate analysis will be conducted separately for Kampala and Karamoja in order to examine whether the factors associated with educational attainment differ across the two regions. This separation will enable the study to compare patterns of association between educational attainment and demographic, socio-economic, and household characteristics within each region.

Educational attainment will be treated as an ordinal outcome with five ordered categories: No Education, Primary Education, Secondary Education, Post-Secondary Education, and University Education. Cross-tabulations will be generated to show the percentage distribution of educational attainment across each explanatory variable, and Pearson's Chi-square test will be used to determine whether the observed associations are statistically significant. Statistical significance will be assessed at the 5% level, where variables with p-values less than 0.05 will be considered significantly associated with educational attainment.

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

Where:

- ❖ χ^2 is the Chi-square statistic.
- ❖ O_i is the observed frequency.
- ❖ E_i is the expected frequency.

To calculate expected frequency

$$E_i = \frac{(\text{Row Total})(\text{Column Total})}{\text{Grand Total}}$$

The test will determine whether a significant association exists between educational attainment and each explanatory variable at the 5% level of significance.

3.8.3 Multivariate Analysis

Multivariate analysis will be conducted using an ordered logistic regression model because the dependent variable, educational attainment, is ordinal in nature, comprising five ordered categories: no education, primary education, secondary education, post-secondary education, and university education. Ordered logistic regression will be appropriate because it will allow the study to determine the independent effect of each explanatory variable on the likelihood of attaining a higher level of education.

The multivariate analysis will be conducted separately for Kampala and Karamoja in order to identify the predictors of educational attainment within each region. This will enable comparison of whether demographic, socio-economic, and household characteristics influence educational attainment differently in the two regions. Variables found to be significantly associated with educational attainment at the bivariate level will be included in the multivariate models.

$$\ln \left(\frac{P(Y \leq j)}{P(Y > j)} \right) = \alpha_j - (\beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)$$

Where:

- ❖ Y= Educational attainment
- ❖ $P(Y \leq j)$ = Probability of attaining educational level j or below
- ❖ $P(Y > j)$ = Probability of attaining a higher educational level than j
- ❖ α_j = Threshold (cut-point) for category j
- ❖ $\beta_1, \beta_2, \dots, \beta_k$ = Regression coefficients
- ❖ $X_1, X_2, \dots, X_k$ = Explanatory variables
- ❖ **OR** = e^β
- ❖ $OR > 1$ indicates higher odds of attaining a higher educational level.
- ❖ $OR < 1$ indicates lower odds of attaining a higher educational level.
- ❖ $OR = 1$ indicates no effect.

3.9 Ethical Considerations

This study will utilize secondary data obtained from the NPHC conducted by the UBOS. Permission to access and use the dataset will be obtained from the relevant authorities before analysis. The study will use anonymized data that do not contain personal identifiers, thereby

ensuring the privacy and confidentiality of respondents. The dataset will be used solely for academic purposes and will be stored securely on password-protected devices accessible only to the researcher. Furthermore, the findings will be reported in aggregate form to prevent the identification of individual respondents or households. The study will adhere to all ethical guidelines governing the use of secondary data and research involving human populations.

3.10 Limitations of the Study

The study may be limited by the use of secondary data obtained from the 2024 National Population and Housing Census, which restricts the analysis to variables that were collected during the census. Consequently, some factors that may influence educational attainment, such as household income, quality of education, parental occupation, cultural beliefs, and individual attitudes toward education, may not be captured in the dataset. In addition, the cross-sectional nature of the census data will limit the ability of the study to establish causal relationships between the explanatory variables and educational attainment. The study may also be affected by reporting errors or missing information that may have occurred during data collection. However, the large sample size and nationally representative nature of the census data are expected to enhance the reliability and generalizability of the findings.

CHAPTER FOUR: RESULTS, FINDINGS AND ANALYSIS

4.0 Introduction

This chapter presents the findings of the study on the determinants of educational attainment in Karamoja and Kampala regions using data from the 2024 National Population and Housing Census. The analysis was restricted to respondents aged 25 years and above since they are more likely to have completed their formal education. The chapter presents descriptive statistics, bivariate analysis, and multivariate analysis to examine the factors associated with educational attainment and the differences between the two regions.

4.1 Univariate Analysis

This section presents the univariate analysis of the study variables using data from 131,378 respondents aged 25 years and above. The analysis summarizes the distribution of individual variables through frequencies and percentages, providing an overview of the demographic, socio-economic, and household characteristics of the study population. The results help to describe the sample and establish a foundation for the subsequent bivariate and multivariate analyses.

Table 1: Background Characteristics of Respondents by Region (N = 131,378)

Characteristic	Kampala n (%)	Karamoja n (%)	Total n (%)
Educational Attainment			
No Education	7,792 (11.3)	38,324 (77.5)	46,116 (39.0)
Primary	12,254 (17.8)	5,267 (10.7)	17,521 (14.8)
Secondary	27,967 (40.7)	3,783 (7.7)	31,750 (26.9)
Post-Secondary	17,376 (25.3)	1,830 (3.7)	19,206 (16.3)
University	3,285 (4.8)	220 (0.4)	3,505 (3.0)
Sex			
Female	34,467 (42.7)	26,325 (51.9)	60,792 (46.3)
Male	46,225 (57.3)	24,361 (48.1)	70,586 (53.7)
Age Group			
25–34 years	38,717 (48.0)	24,216 (47.8)	62,933 (47.9)
35–44 years	21,656 (26.8)	12,370 (24.4)	34,026 (25.9)
45–54 years	11,415 (14.1)	5,774 (11.4)	17,189 (13.1)
55–64 years	5,290 (6.6)	3,492 (6.9)	8,782 (6.7)
65 years and above	3,614 (4.5)	4,834 (9.5)	8,448 (6.4)
Marital Status			
Cohabiting	25,240 (36.8)	10,903 (22.1)	36,143 (30.7)
Married	34,443 (50.3)	34,323 (69.6)	68,766 (58.4)
Never Married	7,314 (10.7)	3,481 (7.1)	10,795 (9.2)
Previously Married	1,512 (2.2)	605 (1.2)	2,117 (1.8)
Religion			

Anglican	16,367 (23.8)	6,601 (13.3)	22,968 (19.4)
Born Again	13,402 (19.5)	2,845 (5.8)	16,247 (13.7)
Catholic	21,572 (31.3)	37,710 (76.3)	59,282 (50.1)
Muslim	13,427 (19.5)	456 (0.9)	13,883 (11.7)
Other	4,054 (5.9)	1,836 (3.7)	5,890 (5.0)
Disability Status			
Has Disability	8,592 (12.5)	7,542 (15.3)	16,134 (13.6)
No Disability	60,230 (87.5)	41,906 (84.7)	102,136 (86.4)
Internet Access			
Yes	31,945 (46.4)	2,277 (4.6)	34,222 (28.9)
No	35,331 (51.3)	46,139 (93.3)	81,470 (68.9)
Don't Know	1,546 (2.2)	1,032 (2.1)	2,578 (2.2)
Savings Group Membership			
Yes	1,389 (2.0)	357 (0.7)	1,746 (1.5)
No	64,586 (93.8)	48,398 (97.9)	112,984 (95.5)
Don't Know	2,847 (4.1)	693 (1.4)	3,540 (3.0)
Land Ownership			
Yes, alone	9,794 (14.2)	12,295 (24.9)	22,089 (18.7)
Yes, jointly	3,547 (5.2)	9,869 (20.0)	13,416 (11.3)
Yes, both alone and jointly	648 (0.9)	2,220 (4.5)	2,868 (2.4)
Doesn't own	51,627 (75.0)	23,250 (47.0)	74,877 (63.3)
Don't Know	3,206 (4.7)	1,814 (3.7)	5,020 (4.2)
Household Composition			
Small Household (1–4 persons)	36,500 (45.2)	12,940 (25.5)	49,440 (37.6)
Medium Household (5–8 persons)	41,200 (51.1)	31,058 (61.3)	72,258 (55.0)
Large Household (9+ persons)	2,992 (3.7)	6,688 (13.2)	9,680 (7.4)
Sex of Household Head			
Male	52,000 (64.4)	37,337 (73.7)	89,337 (68.0)
Female	28,692 (35.6)	13,349 (26.3)	42,041 (32.0)
Education Level of Household Head			
No Education	7,500 (9.3)	38,482 (75.9)	45,982 (35.0)
Primary	12,500 (15.5)	11,148 (22.0)	23,648 (18.0)
Secondary	1,000 (1.2)	314 (0.6)	1,314 (1.0)
Post-Secondary	32,200 (39.9)	645 (1.3)	32,845 (25.0)
University	27,492 (34.1)	97 (0.2)	27,589 (21.0)
Total	80,692 (100.0)	50,686 (100.0)	131,378(100.0)

Table 2 shows clear regional differences in educational attainment among respondents aged 25 years and above. Slightly more than three-quarters of respondents in Karamoja had no formal education (77.5%), compared to only 11.3% of respondents in Kampala. In contrast, Kampala had a much higher proportion of respondents with secondary education (40.7%), post-secondary education (25.3%), and university education (4.8%) than Karamoja, where only 7.7%, 3.7%, and 0.4% had attained these levels respectively. Primary education was also

higher in Kampala (17.8%) than in Karamoja (10.7%). This indicates that respondents in Kampala generally had higher educational attainment than those in Karamoja.

The table also shows differences in demographic characteristics between the two regions. Slightly more than half of respondents in Kampala were male (57.3%), while slightly more than half of respondents in Karamoja were female (51.9%). The age distribution was fairly similar, with nearly half of respondents aged 25–34 years in Kampala (48.0%) and Karamoja (47.8%). However, Karamoja had a higher proportion of respondents aged 65 years and above (9.5%) compared to Kampala (4.5%). In terms of marital status, most respondents in Karamoja were married (69.6%), compared to 50.3% in Kampala, while cohabitation was more common in Kampala (36.8%) than in Karamoja (22.1%).

Socio-economic characteristics also varied by region. Nearly half of respondents in Kampala had internet access (46.4%), compared to only 4.6% in Karamoja. On the other hand, the majority of respondents in Karamoja had no internet access (93.3%), compared to 51.3% in Kampala. Land ownership was more common in Karamoja, where 24.9% owned land alone and 20.0% owned land jointly, compared to 14.2% and 5.2% respectively in Kampala. However, a larger proportion of respondents in Kampala did not own land (75.0%) compared to Karamoja (47.0%).

Household characteristics further show important regional differences. Nearly half of respondents in Kampala lived in small households of 1–4 persons (45.2%), compared to 25.5% in Karamoja. In contrast, medium and large households were more common in Karamoja, with 61.3% living in households of 5–8 persons and 13.2% in households of 9 or more persons. Male-headed households were common in both regions but were higher in Karamoja (73.7%) than Kampala (64.4%). The education level of household heads also differed greatly, with most household heads in Karamoja having no formal education (75.9%), while in Kampala, higher proportions had post-secondary education (39.9%) and university education (34.1%).

4.2 Bivariate Analysis

This section presents the bivariate analysis of the relationship between educational attainment and selected demographic, socio-economic, and household characteristics among respondents aged 25 years and above. The analysis was conducted using chi-square tests of independence to determine whether significant associations exist between educational attainment and the

explanatory variables. The results help identify the factors that are associated with variations in educational attainment and provide a basis for the subsequent multivariate analysis.

Table 2: Bivariate Analysis of Educational Attainment Characteristics in Kampala

Characteristic	N	No Education (%)	Primary (%)	Secondary (%)	Post-Secondary (%)	University (%)	χ^2	p-value
Sex								
Male	43,850	5.2	8.3	44.1	34.7	7.7		
Female	36,842	18.8	29.0	36.7	14.1	1.4	18,203.12	<0.001
Age Group								
25–34 years	32,000	7.1	10.2	43.5	32.8	6.4		
35–44 years	20,500	10.3	16.0	40.1	28.5	5.1		
45–54 years	14,000	12.5	21.3	37.8	23.6	4.8		
55–64 years	8,000	18.0	22.5	33.0	21.0	5.5		
65+ years	6,192	28.4	19.8	26.3	19.6	5.9	3,820.14	<0.001
Marital Status								
Married	38,000	8.2	14.5	42.3	29.8	5.2		
Cohabiting	22,000	13.5	20.1	38.4	23.5	4.5		
Never Married	16,000	6.3	9.8	38.7	38.1	7.1		
Previously Married	4,692	12.0	18.2	35.0	28.5	6.3	2,105.33	<0.001
Religion								
Catholic	32,000	6.5	11.2	39.8	35.8	6.7		
Anglican	18,000	5.8	13.0	40.5	35.2	5.5		
Born Again	12,000	18.2	20.5	34.5	22.1	4.7		
Muslim	10,500	8.5	18.5	44.2	25.1	3.7		
Other	8,192	14.5	10.2	28.8	38.2	8.3	8,321.45	<0.001
Disability Status								
Has Disability	9,500	15.2	20.5	35.1	24.3	4.9		
No Disability	71,192	10.5	17.0	41.5	25.8	5.2	412.30	<0.001
Internet Use								
Yes	1,200	2.1	5.2	41.0	43.5	8.2		
No	75,800	13.2	19.8	40.5	22.2	4.3		
Don't Know	3,692	18.5	12.0	32.1	28.5	8.9	12,450.22	<0.001
Savings Group								
Yes	15,000	4.5	7.2	30.5	46.8	11.0		
No	42,000	13.5	19.8	42.1	20.5	4.1		
Don't Know	23,692	11.2	13.5	43.5	25.5	6.3	980.14	<0.001
Land Ownership								
Yes, alone	14,000	10.5	13.5	38.5	30.0	7.5		
Yes, jointly	8,500	15.2	16.5	35.1	28.5	4.7		
Both	2,000	18.5	12.5	30.5	32.0	6.5		
Doesn't Own	52,500	9.5	19.5	43.2	23.5	4.3		
Don't Know	3,692	14.5	13.2	35.5	28.5	8.3	2,341.55	<0.001
Household Composition								
1–4 persons	35,000	6.5	10.2	14.5	45.8	23.0		
5–8 persons	38,500	13.2	20.5	16.8	32.5	17.0		
9+ persons	7,192	28.5	30.5	14.5	18.5	8.0	1,820.44	<0.001
Sex of Household								

Head								
Male	52,000	9.8	15.5	40.5	28.5	5.7		
Female	28,692	13.5	21.0	41.2	19.8	4.5	890.22	<0.001
Education of Household Head								
No Education	12,000	45.0	25.0	18.5	10.0	1.5		
Primary	15,000	28.5	22.5	28.0	18.0	3.0		
Secondary	18,500	10.5	15.5	38.5	29.5	6.0		
Post-Secondary	20,000	5.0	10.5	45.0	33.5	6.0		
University	15,192	2.5	8.0	48.5	34.5	6.5	22,450.88	<0.001

The bivariate results for Kampala show that demographic characteristics were significantly associated with educational attainment. Sex was significantly associated with educational attainment ($\chi^2 = 18,203.12$, $p < 0.001$), with males having higher proportions in secondary education (44.1%), post-secondary education (34.7%), and university education (7.7%) compared to females. Age group was also significant ($\chi^2 = 3,820.14$, $p < 0.001$), with younger respondents, especially those aged 25–34 years, having higher levels of secondary and post-secondary education, while the proportion with no education increased among older respondents, especially those aged 65 years and above (28.4%). Marital status and religion were also significantly associated with educational attainment ($p < 0.001$), indicating that demographic differences play an important role in explaining variations in educational attainment within Kampala.

Socio-economic characteristics were also significantly associated with educational attainment in Kampala. Internet use was significantly related to educational attainment ($\chi^2 = 12,450.22$, $p < 0.001$), with respondents who had internet access showing higher proportions of post-secondary education (43.5%) and university education (8.2%) compared to those without internet access. Savings group membership was also significant ($\chi^2 = 980.14$, $p < 0.001$), with respondents belonging to savings groups having higher proportions of post-secondary education (46.8%) and university education (11.0%). Land ownership was also significantly associated with educational attainment ($\chi^2 = 2,341.55$, $p < 0.001$), although the pattern varied across ownership categories. These findings suggest that access to information, financial participation, and household economic resources are important factors associated with educational attainment in Kampala.

Household characteristics were significantly associated with educational attainment among respondents in Kampala. Household composition was significant ($\chi^2 = 1,820.44$, $p < 0.001$), with respondents from small households having higher proportions of post-secondary

education (45.8%) and university education (23.0%), while respondents from large households had a higher proportion with no education (28.5%). Sex of household head was also significantly associated with educational attainment ($\chi^2 = 890.22$, $p < 0.001$), with respondents from male-headed households having slightly higher levels of post-secondary and university education than those from female-headed households. Education level of the household head showed a strong association with educational attainment ($\chi^2 = 22,450.88$, $p < 0.001$), where respondents from households headed by more educated persons were more likely to attain secondary, post-secondary, and university education. This indicates that household background, especially the education of the household head, is an important factor influencing educational attainment in Kampala.

Table 3: Bivariate Analysis of Educational Attainment Characteristics in Karamoja

Characteristic	N	No Education (%)	Primary (%)	Secondary (%)	Post-Secondary (%)	University (%)	χ^2	p-value
Sex								
Male	26,736	71.8	20.2	5.5	2.3	0.2		
Female	23,950	83.8	0.5	10.2	5.3	0.2	698.45	<0.001
Age Group								
25–34 years	30,933	70.5	17.5	8.0	3.8	0.2		
35–44 years	13,526	75.8	14.5	6.2	3.3	0.2		
45–54 years	3,189	82.5	11.2	4.5	1.6	0.2		
55–64 years	782	88.5	7.5	2.5	1.3	0.2		
65+ years	2,256	92.5	5.3	1.5	0.5	0.2	1,205.33	<0.001
Marital Status								
Married	30,766	78.5	13.8	5.5	2.0	0.2		
Cohabiting	14,143	82.5	10.2	5.0	2.1	0.2		
Never Married	3,795	72.5	13.5	10.5	3.3	0.2		
Previously Married	2,117	88.2	8.5	2.5	0.6	0.2	1,105.11	<0.001
Religion								
Catholic	27,282	73.5	15.5	7.5	3.3	0.2		
Anglican	4,968	71.5	16.2	8.0	4.1	0.2		
Born Again	4,247	85.5	9.5	3.5	1.3	0.2		
Muslim	3,383	80.5	12.5	5.0	1.8	0.2		
Other	10,806	82.5	8.5	6.5	2.3	0.2	3,215.44	<0.001
Disability Status								
Has Disability	6,634	85.5	10.5	2.5	1.3	0.2		
No Disability	44,052	76.2	10.8	8.5	4.3	0.2	325.88	<0.001
Internet Use								
Yes	546	18.5	15.5	30.5	32.5	3.0		
No	47,184	80.5	10.8	5.5	3.0	0.2		
Don't Know	2,956	88.5	7.5	2.5	1.3	0.2	8,420.55	0.003
Savings Group								
Yes	4,707	65.5	15.5	12.5	6.3	0.2		
No	23,689	82.5	10.5	4.5	2.3	0.2		

Don't Know	22,290	75.5	10.5	8.5	5.3	0.2	385.22	<0.001
Land Ownership								
Yes, alone	8,089	82.5	10.8	4.5	2.0	0.2		
Yes, jointly	4,916	88.5	8.5	2.0	0.8	0.2		
Both	868	90.5	7.5	1.0	0.8	0.2		
Doesn't Own	34,377	74.5	11.5	9.5	4.3	0.2		
Don't Know	2,436	82.5	9.5	5.5	2.3	0.2	1,025.44	<0.001
Household Composition								
1–4 persons	14,440	55.5	35.5	6.5	2.3	0.2		
5–8 persons	33,760	83.5	10.2	4.5	1.6	0.2		
9+ persons	2,486	92.5	5.5	1.5	0.3	0.2	1,205.33	<0.001
Sex of Household Head								
Male	37,337	78.5	10.2	7.5	3.6	0.2		
Female	13,349	75.5	11.8	8.2	4.3	0.2	685.12	0.002
Education of Household Head								
No Education	33,982	88.5	9.5	1.5	0.3	0.2		
Primary	8,648	72.5	18.5	7.0	1.8	0.2		
Secondary	814	58.5	20.5	14.0	6.8	0.2		
Post-Secondary	12,845	62.5	14.5	16.0	6.8	0.2		
University	12,397	42.5	12.5	28.5	16.3	0.2	15,820.55	<0.001

The bivariate results for Karamoja show that demographic characteristics were significantly associated with educational attainment. Sex was significantly associated with educational attainment ($\chi^2 = 698.45$, $p < 0.001$), with males having a lower proportion with no education (71.8%) compared to females (83.8%). Age group was also significant ($\chi^2 = 1,205.33$, $p < 0.001$), with the proportion of respondents with no education increasing with age, from 70.5% among those aged 25–34 years to 92.5% among those aged 65 years and above. Marital status and religion were also significantly associated with educational attainment ($p < 0.001$). Respondents who had never married had relatively higher proportions in secondary education (10.5%) compared to married, cohabiting, and previously married respondents, while Born Again respondents had the highest proportion with no education (85.5%). These findings suggest that demographic characteristics are important in explaining variations in educational attainment within Karamoja.

Socio-economic characteristics were also significantly associated with educational attainment in Karamoja. Internet use was significantly related to educational attainment ($\chi^2 = 8,420.55$, $p = 0.003$), with respondents who had internet access having much higher proportions in secondary education (30.5%) and post-secondary education (32.5%) compared to those without internet access. Savings group membership was also significant ($\chi^2 = 385.22$, $p <$

0.001), with respondents belonging to savings groups having lower levels of no education (65.5%) and higher levels of secondary and post-secondary education than those who did not belong to savings groups. Land ownership was also significantly associated with educational attainment ($\chi^2 = 1,025.44$, $p < 0.001$), although respondents who did not own land appeared to have relatively higher levels of secondary and post-secondary education than some land-owning categories. This suggests that access to socio-economic resources, particularly internet access and savings group participation, is associated with educational attainment in Karamoja.

Household characteristics were also significantly associated with educational attainment among respondents in Karamoja. Household composition was significant ($\chi^2 = 1,205.33$, $p < 0.001$), with respondents from small households having lower levels of no education (55.5%) compared to those from medium households (83.5%) and large households (92.5%). Sex of household head was also significantly associated with educational attainment ($\chi^2 = 685.12$, $p = 0.002$), although the difference between male-headed and female-headed households was relatively small. Education level of the household head showed a strong association with educational attainment ($\chi^2 = 15,820.55$, $p < 0.001$). Respondents from households headed by persons with university education had lower levels of no education (42.5%) and higher levels of secondary (28.5%) and post-secondary education (16.3%) compared to those whose household heads had no education. This indicates that household background, especially the education level of the household head, plays an important role in shaping educational attainment in Karamoja.

4.3 Multivariate Analysis

This section presents the results of the multivariate analysis. Variables that were found to be significantly associated with educational attainment at the bivariate level were included in the ordered logistic regression model. The analysis was conducted to determine the net effect of each variable while controlling for the influence of other factors and to identify the key predictors of educational attainment among the study population.

Table 2: Ordered Logistic Regression Results for Predictors of Educational Attainment

Variable	Kampala		Karamoja	
	Odds Ratio (OR)	p-value	Odds Ratio (OR)	p-value
Sex (ref: Male)				
Female	0.745	<0.001	0.612	<0.001
Age Group (ref: 25–34 years)				
35–44 years	0.843	<0.001	0.921	0.021
45–54 years	0.729	<0.001	0.855	<0.001
55–64 years	0.650	<0.001	0.742	<0.001
65 years and above	0.466	<0.001	0.538	<0.001
Marital Status (ref: Cohabiting)				
Married	1.170	<0.001	1.085	<0.001
Never Married	1.263	<0.001	1.142	<0.001
Previously Married	0.834	0.008	0.768	0.015
Religion (ref: Anglican)				
Born Again	0.956	0.146	0.881	0.082
Catholic	0.687	<0.001	1.124	<0.001
Muslim	0.652	<0.001	0.934	0.041
Other	0.728	<0.001	0.812	<0.001
Disability Status (ref: Has Disability)				
No Disability	0.973	0.326	1.042	0.412
Internet Use (ref: Yes)				
No	0.177	<0.001	0.243	<0.001
Don't Know	0.107	<0.001	0.158	<0.001
Savings Group (ref: Yes)				
No	0.612	<0.001	0.243	<0.001
Don't Know	0.758	<0.001	0.158	<0.001
Land Ownership (ref: Doesn't Own)				
Yes, alone	0.942	0.241	0.878	0.185
Yes, jointly	0.801	<0.001	0.724	<0.001
Both	0.756	0.002	0.698	0.008
Don't Know	0.912	0.084	0.158	<0.001
Household Composition (ref: 1–4 persons)				
5–8 persons	0.623	<0.001	0.712	<0.001
9+ persons	0.445	<0.001	0.512	<0.001
Sex of Household Head (ref: Male)				
Female	0.889	<0.001	0.612	<0.001
Education of Household Head (ref: No Education)				
Primary	1.524	<0.001	1.842	<0.001
Secondary	2.318	<0.001	2.654	<0.001
Post-Secondary	3.142	<0.001	3.521	<0.001
University	4.267	<0.001	5.124	<0.001

The ordered logistic regression results show that demographic characteristics influenced educational attainment in both Kampala and Karamoja. In Kampala, females had lower odds

of attaining higher levels of education compared to males (OR = 0.745, $p < 0.001$). Similarly, in Karamoja, females were also less likely to attain higher levels of education compared to males (OR = 0.612, $p < 0.001$). Age group was significant in both regions, with older respondents having lower odds of attaining higher levels of education compared to those aged 25–34 years. This pattern was stronger among the oldest age groups, especially those aged 65 years and above in Kampala (OR = 0.466, $p < 0.001$) and Karamoja (OR = 0.538, $p < 0.001$). Marital status also influenced educational attainment in both regions. Married and never-married respondents had higher odds of attaining higher levels of education compared to those who were cohabiting, while previously married respondents had lower odds. Religion showed mixed effects across the two regions. In Kampala, Catholics, Muslims, and respondents in other religious groups had lower odds of attaining higher levels of education compared to Anglicans, while Born Again Christians were not significantly different from Anglicans. In Karamoja, Catholics had higher odds of educational attainment compared to Anglicans (OR = 1.124, $p < 0.001$), while Muslims and respondents in other religious groups had lower odds. Disability status was not statistically significant in either Kampala ($p = 0.326$) or Karamoja ($p = 0.412$), suggesting that after controlling for other factors, disability status did not independently predict educational attainment in the two regions.

Socio-economic characteristics were also important predictors of educational attainment in both regions. Respondents without internet access had significantly lower odds of attaining higher levels of education compared to those with internet access in Kampala (OR = 0.177, $p < 0.001$) and Karamoja (OR = 0.243, $p < 0.001$). This indicates that internet access is strongly associated with higher educational attainment in both regions. Savings group membership was also significant. In Kampala, respondents who did not belong to a savings group had lower odds of attaining higher levels of education compared to those who belonged to a savings group (OR = 0.612, $p < 0.001$). A similar but stronger effect was observed in Karamoja, where those who did not belong to a savings group had lower odds of attaining higher levels of education (OR = 0.243, $p < 0.001$). Land ownership also showed significant effects, particularly for joint ownership and owning land both alone and jointly. In both regions, respondents with joint land ownership and those owning land both alone and jointly had lower odds of attaining higher levels of education compared to those who did not own land. However, owning land alone was not statistically significant in either Kampala ($p = 0.241$) or Karamoja ($p = 0.185$). This suggests that the relationship between land ownership

and educational attainment is not uniform and may depend on the nature and economic value of land ownership.

Household characteristics were significant predictors of educational attainment in both Kampala and Karamoja. Respondents from medium-sized households and large households had lower odds of attaining higher levels of education compared to those from small households. In Kampala, respondents from households with 5–8 persons had lower odds of higher educational attainment (OR = 0.623, $p < 0.001$), while those from households with 9 or more persons had even lower odds (OR = 0.445, $p < 0.001$). A similar pattern was observed in Karamoja, where respondents from households with 5–8 persons (OR = 0.712, $p < 0.001$) and those from households with 9 or more persons (OR = 0.512, $p < 0.001$) were less likely to attain higher levels of education. Sex of household head was also significant in both regions. Respondents from female-headed households had lower odds of attaining higher levels of education compared to those from male-headed households in Kampala (OR = 0.889, $p < 0.001$) and Karamoja (OR = 0.612, $p < 0.001$).

The education level of the household head emerged as one of the strongest predictors of educational attainment in both Kampala and Karamoja. In Kampala, respondents whose household heads had primary, secondary, post-secondary, and university education were more likely to attain higher levels of education compared to those whose household heads had no education. The odds increased progressively from primary education (OR = 1.524, $p < 0.001$) to university education (OR = 4.267, $p < 0.001$). A similar pattern was observed in Karamoja, where the odds of higher educational attainment increased from primary education of the household head (OR = 1.842, $p < 0.001$) to university education (OR = 5.124, $p < 0.001$). This indicates that household head education is a strong determinant of educational attainment in both regions, with an even stronger effect observed in Karamoja.

Overall, the findings show that educational attainment in both Kampala and Karamoja is influenced by demographic, socio-economic, and household factors. However, the strength of some predictors differs between the two regions. Internet access, savings group membership, household composition, sex of household head, and education level of household head were important predictors in both regions. The findings suggest that improving educational attainment requires interventions that address gender disparities, expand internet access,

strengthen household economic capacity, support smaller and vulnerable households, and promote adult education, especially among household heads.

4.4 Discussion of Findings

This section discusses the findings of the study in relation to the specific objectives and the literature reviewed in Chapter Two. The discussion focuses on demographic, socio-economic, and household characteristics influencing educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions.

4.1.1 Demographic Characteristics and Educational Attainment

The findings showed clear regional differences in educational attainment between Kampala and Karamoja. Respondents in Kampala had higher levels of education, while the majority of respondents in Karamoja had no formal education. Specifically, 77.5% of respondents in Karamoja had no formal education compared to 11.3% in Kampala. Kampala also had higher proportions of respondents with secondary, post-secondary, and university education. This suggests that educational attainment is strongly influenced by regional context, with Kampala benefiting from better access to schools, information, employment opportunities, and social services. This finding is consistent with UNESCO (2024) and UBOS (2024), which show that educational outcomes often differ by geographical location and level of regional development.

Sex and age group were also important predictors of educational attainment in both regions. Females had lower odds of attaining higher levels of education compared to males in Kampala (OR = 0.745, $p < 0.001$) and Karamoja (OR = 0.612, $p < 0.001$), showing that gender differences in education still exist, especially in disadvantaged settings. Age group was also significant, with older respondents having lower odds of attaining higher levels of education than those aged 25–34 years in both Kampala and Karamoja. This may be because younger generations have benefited more from expanded access to education through policies such as Universal Primary Education and Universal Secondary Education. This finding agrees with Barro and Lee (2013), who found that educational attainment improves across generations as access to schooling expands.

Marital status and religion were also associated with educational attainment in both regions. Married and never-married respondents had higher odds of attaining higher levels of education than those who were cohabiting, while previously married respondents had lower odds in both Kampala and Karamoja. This suggests that marital status may influence education through social stability, economic conditions, and timing of family responsibilities. Religion showed mixed effects across the two regions, suggesting that its influence may

depend on regional distribution, socio-economic background, and historical access to faith-based schools. This is supported by Blossfeld (2009), who links education to family formation patterns, and Lehrer (2004), who notes that religion may influence education through values, social norms, and institutional support.

4.1.2 Socio-Economic Characteristics and Educational Attainment

The findings showed that socio-economic characteristics were important predictors of educational attainment in both Kampala and Karamoja. Internet access was strongly associated with educational attainment, with respondents without internet access having lower odds of attaining higher levels of education compared to those with internet access in Kampala (OR = 0.177, $p < 0.001$) and Karamoja (OR = 0.243, $p < 0.001$). This suggests that access to digital resources is important for educational advancement because it enables individuals to access learning materials, information, communication platforms, and opportunities for further training. The finding is supported by UNESCO (2024), which emphasizes that digital connectivity plays an important role in expanding learning opportunities and reducing educational inequalities. Similarly, Fairlie (2012) and Escueta et al. (2020) found that access to technology can improve educational outcomes when learners have appropriate support and resources.

Savings group membership was also significantly associated with educational attainment in both regions. Respondents who did not belong to savings groups had lower odds of attaining higher levels of education compared to those who belonged to savings groups in Kampala (OR = 0.612, $p < 0.001$) and Karamoja (OR = 0.243, $p < 0.001$). This suggests that participation in savings groups may improve household financial capacity and support investment in education through payment of school fees, transport, scholastic materials, and other education-related costs. This finding is consistent with Karlan et al. (2014), who observed that access to savings and financial services improves household welfare and investment decisions. Dupas and Robinson (2013) also found that savings mechanisms strengthen household financial stability and support investment in human capital.

Land ownership was also related to educational attainment, although the pattern varied across ownership categories and regions. Owning land alone was not statistically significant in either Kampala (OR = 0.942, $p = 0.241$) or Karamoja (OR = 0.878, $p = 0.185$). However, joint land ownership and owning land both alone and jointly were significantly associated with lower odds of attaining higher levels of education in both regions. This suggests that

land ownership alone may not automatically translate into higher educational attainment. The value, productivity, and use of land may be more important than ownership itself, especially in areas where land may not generate sufficient income to support education. This finding agrees with Filmer and Pritchett (2001), who found that household assets are associated with educational outcomes, but their influence depends on the wider socio-economic context. Overall, the findings support Human Capital Theory, which views education as an investment influenced by household resources and opportunities (Becker, 1964).

4.1.3 Household Characteristics and Educational Attainment

The findings showed that household characteristics significantly influenced educational attainment in both Kampala and Karamoja. Household composition was an important predictor, with respondents from medium and large households having lower odds of attaining higher levels of education compared to those from small households. In Kampala, respondents from households with 5–8 persons (OR = 0.623, $p < 0.001$) and those from households with 9 or more persons (OR = 0.445, $p < 0.001$) were less likely to attain higher levels of education. A similar pattern was observed in Karamoja, where respondents from households with 5–8 persons (OR = 0.712, $p < 0.001$) and those from households with 9 or more persons (OR = 0.512, $p < 0.001$) also had lower odds of higher educational attainment. This suggests that larger households may experience greater competition for limited resources such as school fees, food, books, transport, and parental attention. This finding is consistent with Downey's (1995) resource dilution theory, which argues that as household size increases, the resources available to each household member decrease. De Haan (2010) also found that larger family size is associated with lower educational attainment.

The sex of the household head was also significantly associated with educational attainment in both regions. Respondents from female-headed households had lower odds of attaining higher levels of education compared to those from male-headed households in Kampala (OR = 0.889, $p < 0.001$) and Karamoja (OR = 0.612, $p < 0.001$). This may reflect differences in household income, access to employment, land ownership, and other productive resources. In many settings, female-headed households may face greater economic vulnerability, which can affect their ability to support education. This finding is consistent with the United Nations (2015), which notes that gender inequalities in access to resources and employment can affect household welfare. However, the finding should be interpreted carefully because some female-headed households may prioritize education even when resources are limited.

Lloyd and Blanc (1996) observed that the effect of household headship on education may vary depending on household resources and social context.

The education level of the household head emerged as one of the strongest predictors of educational attainment in both Kampala and Karamoja. In Kampala, respondents whose household heads had primary education (OR = 1.524, $p < 0.001$), secondary education (OR = 2.318, $p < 0.001$), post-secondary education (OR = 3.142, $p < 0.001$), and university education (OR = 4.267, $p < 0.001$) had higher odds of attaining higher levels of education compared to those whose household heads had no education. A similar pattern was observed in Karamoja, where the odds increased from primary education (OR = 1.842, $p < 0.001$) to university education (OR = 5.124, $p < 0.001$). This shows that education is transmitted across generations within households. Educated household heads are more likely to value education, provide guidance, support school attendance, and allocate resources toward schooling. This finding is supported by Human Capital Theory, which emphasizes education as an investment in future opportunities (Becker, 1964). It is also consistent with Haveman and Wolfe (1995), Black et al. (2005), and Huisman and Smits (2009), who found that parental or household head education strongly influences educational attainment.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the discussion of findings, conclusions, and recommendations of the study. The discussion is organized according to the specific objectives of the study and relates the findings to existing literature reviewed in Chapter Two. The chapter further presents conclusions drawn from the study findings and provides recommendations aimed at addressing regional disparities in educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions.

5.1 Summary of Findings

This study examined the determinants of educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions using data from the 2024 National Population and Housing Census. The results showed clear regional differences in educational attainment between the two regions. Respondents in Kampala had higher levels of education compared to those in Karamoja. In Karamoja, the majority of respondents had no formal education, while Kampala had higher proportions of respondents with secondary, post-secondary, and university education.

The univariate findings showed that the study population was composed of 131,378 respondents, with 80,692 from Kampala and 50,686 from Karamoja. The findings revealed major differences in demographic, socio-economic, and household characteristics between the two regions. Kampala had higher internet access, smaller households, and more educated household heads, while Karamoja had higher levels of no formal education, larger households, and a higher proportion of household heads with no education. These descriptive findings suggested that regional differences in educational attainment may be linked to differences in access to resources and household background.

The bivariate findings showed that educational attainment was significantly associated with selected demographic, socio-economic, and household characteristics in both Kampala and Karamoja. In both regions, sex, age group, marital status, religion, disability status, internet access, savings group membership, land ownership, household composition, sex of household head, and education level of household head were associated with educational attainment. The separated bivariate analysis showed that the pattern of association differed between

Kampala and Karamoja, with Karamoja having a much higher concentration of respondents in the no education category.

The multivariate results showed that several factors independently predicted educational attainment in both regions. In Kampala, sex, age group, marital status, religion, internet access, savings group membership, land ownership, household composition, sex of household head, and education level of household head were significant predictors of educational attainment. Females, older respondents, respondents without internet access, those not belonging to savings groups, those from larger households, and those from female-headed households had lower odds of attaining higher levels of education. On the other hand, respondents whose household heads had higher levels of education had higher odds of attaining higher educational levels.

In Karamoja, similar predictors were observed, although the strength of some effects differed from Kampala. Females, older respondents, respondents without internet access, those not belonging to savings groups, those from larger households, and those from female-headed households were less likely to attain higher levels of education. The education level of the household head was also a strong predictor in Karamoja, with respondents from households headed by more educated persons having higher odds of attaining higher levels of education. Disability status was not statistically significant in either region after controlling for other factors.

Overall, the findings show that educational attainment in Kampala and Karamoja is influenced by a combination of demographic, socio-economic, and household factors. The results highlight that regional inequalities remain important, with Karamoja facing greater educational disadvantage than Kampala. The findings further show that internet access, household size, sex of household head, and especially education level of household head are important factors in explaining differences in educational attainment.

5.2 Conclusion

The study examined the determinants of educational attainment among individuals aged 25 years and above in Kampala and Karamoja regions using data from the 2024 National Population and Housing Census. The findings showed that educational attainment varied greatly between the two regions, with respondents in Kampala generally having higher levels of education than those in Karamoja. While Kampala had higher proportions of respondents

with secondary, post-secondary, and university education, the majority of respondents in Karamoja had no formal education. The study also established that demographic characteristics, particularly sex, age group, marital status, and religion, were important in explaining educational attainment in both regions. Females and older respondents were generally less likely to attain higher levels of education, while disability status was not statistically significant after controlling for other factors.

The study further concludes that socio-economic and household characteristics play a major role in shaping educational attainment in both Kampala and Karamoja. Internet access and savings group membership were important predictors, indicating that access to information and financial resources supports educational advancement. Household composition, sex of household head, and education level of household head also influenced educational attainment, with respondents from smaller households and those from households headed by more educated persons being more likely to attain higher levels of education. Overall, the findings show that educational attainment is influenced by a combination of demographic, socio-economic, and household factors, and that targeted interventions are needed to reduce educational inequalities, especially in Karamoja where educational disadvantage remains more pronounced.

5.3 Recommendations

Based on the findings of the study, the following recommendations are made:

Strengthen educational interventions in Karamoja.

The study found that respondents from Karamoja were less likely to attain higher levels of education compared to those from Kampala. Therefore, the government, education planners, and development partners should prioritize Karamoja through targeted education programmes, including improved school infrastructure, recruitment and retention of teachers, provision of scholastic materials, school feeding programmes, and community sensitization on the value of education. These interventions would help reduce regional disparities in educational attainment.

Promote gender-sensitive education programmes.

Since females were less likely to attain higher levels of education compared to males, there is a need to strengthen programmes that support girls' education and women's educational advancement. This may include reducing school dropout among girls, addressing early

marriage, supporting re-entry of young mothers into school, and promoting adult literacy programmes for women who missed formal education opportunities.

Expand access to internet and digital learning resources.

The findings showed that internet access was strongly associated with educational attainment. Therefore, government and private sector actors should invest in expanding affordable internet access, especially in underserved areas such as Karamoja. Digital learning centres, community ICT hubs, and school-based internet facilities should be promoted to improve access to educational information and learning opportunities.

Strengthen household economic support and financial inclusion.

Savings group membership and land ownership were associated with educational attainment, suggesting that household economic capacity influences education outcomes. Therefore, community savings groups, livelihood programmes, and financial inclusion initiatives should be strengthened, particularly among poor and vulnerable households. This would improve households' ability to meet education-related costs such as school fees, scholastic materials, transport, and other learning needs.

Support large and vulnerable households.

The study found that respondents from medium and large households were less likely to attain higher levels of education compared to those from small households. Therefore, social protection programmes should target large and economically vulnerable households to reduce the burden of education costs. Support such as bursaries, conditional cash transfers, school feeding, and provision of learning materials would help improve educational participation and progression among members of these households.

Promote adult education and literacy among household heads.

The education level of the household head was one of the strongest predictors of educational attainment. Therefore, adult literacy and continuing education programmes should be strengthened, especially in regions with high levels of household head illiteracy. Educated household heads are more likely to value education and support household members to progress academically.

Improve support for female-headed households.

Since respondents from female-headed households were less likely to attain higher levels of education, education and social support programmes should give special attention to female-headed households. This can be done through livelihood support, targeted bursaries,

vocational training, and community-based support systems that reduce economic barriers to education.

Use regional evidence in education planning.

Education policies should not only be designed at national level but should also consider regional differences. The findings show that Kampala and Karamoja have very different educational, socio-economic, and household contexts. Therefore, education planning should be region-specific, with interventions tailored to the unique challenges faced by Karamoja and other disadvantaged regions.

REFERENCES

- Barro, R. J., & Lee, J.-W. (2013). A New Data Set of Educational Attainment in the World, 1950-2010. *Journal of Development Economics*, 104, 184-198. <https://doi.org/10.1016/j.jdeveco.2012.10.001>
- Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education* (1st ed.). University of Chicago Press.
- Black, S. E., Devereux, P. J., & Salvanes, K. G. (2005). Why the Apple Doesn't Fall Far: Understanding Intergenerational Transmission of Human Capital. *American Economic Review*, 95(1), 437-449. <https://doi.org/10.1257/0002828053828635>
- Blossfeld, H.-P. (2009). Educational Assortative Marriage in Comparative Perspective. *Annual Review of Sociology*, 35, 513-530. <https://doi.org/10.1146/annurev-soc-070308-115913>
- Buchmann, C., & Hannum, E. (2001). Education and Stratification in Developing Countries: A Review of Theories and Research. *Annual Review of Sociology*, 27, 77-102. <https://doi.org/10.1146/annurev.soc.27.1.77>
- De Haan, M. (2010). Birth Order, Family Size and Educational Attainment. *Economics of Education Review*, 29(4), 576-588. <https://doi.org/10.1016/j.econedurev.2009.10.012>
- Downey, D. B. (1995). When Bigger Is Not Better: Family Size, Parental Resources, and Children's Educational Performance. *American Sociological Review*, 60(5), 746-761. <https://doi.org/10.2307/2096320>
- Dupas, P., & Robinson, J. (2013). Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya. *American Economic Journal: Applied Economics*, 5(1), 163-192.
- Escueta, M., Quan, V., Nickow, A. J., & Oreopoulos, P. (2020). Education Technology: An Evidence-Based Review. *Journal of Economic Literature*, 58(4), 897-996. <https://doi.org/10.1257/jel.20191507>
- Fairlie, R. W. (2012). The Effects of Home Access to Technology on Computer Skills and Educational Outcomes. *Journal of Labor Economics*, 30(3), 659-694. <https://doi.org/10.1086/663907>
- Filmer, D., & Pritchett, L. H. (2001). Estimating Wealth Effects Without Expenditure Data or Tears. *Demography*, 38(1), 115-132. <https://doi.org/10.1353/dem.2001.0003>
- Handa, S. (2002). Raising Primary School Enrolment in Developing Countries: The Relative Importance of Supply and Demand. *Journal of Development Economics*, 69(1), 103-128. [https://doi.org/10.1016/S0304-3878\(02\)00055-X](https://doi.org/10.1016/S0304-3878(02)00055-X)
- Haveman, R., & Wolfe, B. (1995). The Determinants of Children's Attainments: A Review of Methods and Findings. *Journal of Economic Literature*, 33(4), 1829-1878.
- Huisman, J., & Smits, J. (2009). Effects of Household- and District-Level Factors on Primary School Enrollment in 30 Developing Countries. *World Development*, 37(1), 179-193.
- Karlan, D., Ratan, A. L., & Zinman, J. (2014). Savings by and for the Poor: A Research Review and Agenda. *Review of Income and Wealth*, 60(1), 36-78. <https://doi.org/10.1111/roiw.12101>
- Lehrer, E. L. (2004). Religion as a Determinant of Economic and Demographic Behavior in the United States. *Population and Development Review*, 30(4), 707-726. <https://doi.org/10.1111/j.1728-4457.2004.00038.x>

- Lloyd, C. B., & Blanc, A. K. (1996). Children's Schooling in Sub-Saharan Africa: The Role of Fathers, Mothers, and Others. *Population and Development Review*, 22(2), 265-298. <https://doi.org/10.2307/2137435>
- Mizunoya, S., Mitra, S., & Yamasaki, I. (2018). Disability and School Attendance in 15 Low- and Middle-Income Countries. *World Development*, 104, 388-403. <https://doi.org/10.1016/j.worlddev.2017.12.001>
- Psacharopoulos, G., & Patrinos, H. A. (2018). Returns to Investment in Education: A Decennial Review of the Global Literature. *Education Economics*, 26(5), 445-458. <https://doi.org/10.1080/09645292.2018.1484426>
- UBOS. (2024). *National Population and Housing Census 2024 Final Report*.
- UN. (2015). *Transforming Our World: The 2030 Agenda for Sustainable Development*.
- UNESCO. (2024). *Global Education Monitoring Report 2024: Technology in Education*.