MAKERERE UNIVERSITY

DETERMINANTS OF HOUSEHOLD INCOME DIVERSIFICATION IN UGANDA

BY

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B.Sc.QE (Mak)

A DISSERTATION SUBMITTED TO THE DIRECTORATE OF GRADUATE TRAINING IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN QUANTITATIVE ECONOMICS OF MAKERERE UNIVERSITY

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DECLARATION

I, **Akampa Onesmus**, do hereby declare that this research thesis is my original work and has never been submitted for any award in any university or institution of higher learning.

Signature: .....**Date:** 15th April 2026.....

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APPROVAL

This is to certify that the research thesis authored by Akampa Onesmus titled Determinants of Income Diversification in Uganda, has been carried out under our guidance. We have assessed the work and determined that it meets the necessary academic criteria for submission for internal and external examination.

We hereby grant approval for its submission as a partial requirement for the award of Master of Science in Quantitative Economics degree of Makerere University.

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DEDICATION

This work is dedicated to the tenacious households of Uganda particularly those residing in rural and post-conflict areas who in spite of scarce resources and challenges, persist in innovating, adapting, and diversifying their incomes for a brighter future for their families. It is my hope that this research will significantly contribute to policies that empower all Ugandans to establish sustainable, diversified, and dignified livelihoods.

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I am immensely thankful to Almighty God for His constant guidance, strength, and blessings throughout this journey.

Finally, I recognize all those who, whether directly or indirectly, played a role in the successful completion of this thesis. Although any flaws in this work are solely my responsibility, I remain devoted to ongoing learning and improvement.

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LIST OF ABBREVIATIONS

ANOVA	-	Analysis of Variance
BRAC	-	Bangladesh Rural Advancement Committee
CDD	-	Community Driven Development
EA	-	Enumeration Area
FAO	-	Food and Agriculture Organization (of the United Nations)
GSOP	-	Ghana Social Opportunities Project
ICT	-	Information and Communication Technology
IFAD	-	International Fund for Agricultural Development
M&E	-	Monitoring and Evaluation
MTIC	-	Ministry of Trade, Industry and Cooperatives
NPA	-	National Planning Authority
NPHC	-	National Population and Housing Census
NYSC	-	National Youth Service Corps
OR	-	Odds Ratio
OWC	-	Operation Wealth Creation
PMKVY	-	Pradhan Mantri Kaushal Vikas Yojana (India)
PRDP	-	Peace, Recovery Development Plan
SCT	-	Social Cash Transfer
SLF	-	Sustainable Livelihoods Framework
SMEs	-	Small and Medium Enterprises
UBOS	-	Uganda Bureau of Statistics
UN	-	United Nations
UNCTAD	-	United Nations Conference on Trade and Development
UNDP	-	United Nations Development Programme
UNFFE	-	Uganda National Farmers Federation
UNHS	-	Uganda National Household Survey
UNICEF	-	United Nations Children's Fund
UPE	-	Universal Primary Education
USE	-	Universal Secondary Education
VTCs	-	Vocational Training Centers
WB	-	World Bank
WBG	-	World Bank Group
WMO	-	World Meteorological Organization
YAP	-	Youth in Agribusiness Program

ABSTRACT

Income diversification is widely recognized as a crucial strategy for enhancing livelihoods, building resilience, reducing poverty, and promoting inclusive economic growth. This study examined the factors influencing income diversification in Uganda, defining it as earning from two or more sources and analyzed a sample of 2,795 observations from the UNHS of 2019/2020 with logistic regression model based on weighted data to ensure representativeness. The sample indicated that 66.5% of households relied on more than one income sources. The findings demonstrated that age group (ages 18–30) have lower odds of diversifying their income compared to other age groups (AOR = 0.10, P=0.006) Conversely, households headed by widows or widowers exhibited higher odds of diversification than those headed by married monogamous individuals (AOR = 6.90, P=0.049) Completing primary education was linked to higher odds of diversification compared to having no formal education (AOR = 4.50, P=0.006), and Wealthy households were associated with higher odds than counterparts (AOR = 4.50, P=0.01). Households in the Western region experienced lower odds of diversification compared to those in the Central region (AOR = 0.30, P=0.011) No access to credit had lower odds than counterparts (AOR = 0.10, P=0.007). Lastly, households that engaged in joint or consultative financial decision-making had higher odds of diversification than those where decisions were made individually (AOR = 3.50, P=0.022).

In conclusion, income diversification in Uganda is primarily shaped by factors (such as wealth and marital status), human capital (including age and education levels), geographic location, and financial access (encompassing access to credit/loans and inclusive decision-making). Other factors such as asset ownership or fundamental demographics like gender or household size don't necessarily determine income diversification. Recommendations include strengthening financial inclusion, investing in basic education, supporting vulnerable groups like widows, and promoting inclusive household decision-making through financial literacy programs.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Income diversification is widely acknowledged as an essential strategy for improving livelihoods, enhancing resilience, alleviating poverty, and fostering inclusive economic growth, particularly in the agrarian economies of Sub-Saharan Africa, where more than 60% of the workforce relies on agriculture, frequently at subsistence levels (Usman & Landry, 2021). In this regard, diversification transcends being merely an economic option; it serves as a vital survival strategy against climate shocks, market fluctuations, and structural underemployment.

Nations around the world are contending with the difficulties posed by uneven economic recovery following the COVID-19 pandemic, elevated inflation rates, geopolitical tensions, and the intensifying effects of climate change (Hill et al., 2025). By diversifying their livelihoods, households can foster resilience and create pathways out of poverty, particularly benefiting at-risk populations seeking a more secure financial future amid uncertainties (Abate, 2025). On a global scale, income diversification is directly aligned with several Sustainable Development Goals (SDGs).

In sub-Saharan Africa, households encounter considerable hurdles in achieving sustainable incomes, despite the region's rich natural resources (Musumba et al., 2022). Roughly 70% of households in this area are heavily dependent on agriculture, rendering sustainable agricultural practices essential for enhancing both food security and economic stability (Giller, 2020). However, climate shocks, conflicts, violence, and the remaining consequences of the global pandemic have drastically affected income stability, leaving many families struggling to meet basic needs (Mitra et al., 2021).Consequently, an estimated 39.7 million individuals in the region are expected to remain at risk of extreme poverty by 2030 (Bukari & Aluko, 2023). Addressing these issues necessitates that households expand their economic activities to better endure external pressures, strengthen financial stability, and cultivate long-term prosperity, ultimately aiding in poverty reduction throughout the region. Nevertheless, the quality and sustainability of these diversification efforts differ significantly. The most impoverished individuals often engage in low-return, survival-oriented activities (for instance, casual labor), whereas households with better resources tend to invest in higher-return ventures (such as trade,

transport, and services). In the absence of adequate support, income diversification remains an advantage for the relatively affluent, leaving the poorest individuals concentrating in low resilience livelihoods thereby hindering progress towards various Sustainable Development Goals (SDGs). Consequently, national development strategies throughout Africa must incorporate livelihood diversification initiatives into their poverty alleviation, climate adaptation, and rural transformation frameworks to realize the 2030 Agenda in a comprehensive and equitable manner (Besada et al., 2017). Within this landscape, income diversification emerges as a critical strategy to manage vulnerabilities and foster resilient income sources (Wan et al., 2016). It not only stabilizes household income and consumption but also enhances the overall quality of life for family members (Kimkong et al., 2023).

Uganda's National Development Plans (NDPs) tackle income diversification by emphasizing a transition from traditional cash crops to a more varied and industrialized economic foundation that offers greater value addition. Essential strategies encompass strengthening the private sector, enhancing infrastructure, and investing in human capital to generate employment opportunities and diminish the informal sector aiming for sustainable and inclusive growth (Munyambabazi et al., 2024).

In Uganda, building household resilience against economic shocks and climate change hinges on diversifying income through access to multiple income streams, including farming, agricultural wages, informal self-employment, formal wage jobs, and remittances (Khan & Morrissey, 2023). Agriculture constitutes the foundation of Uganda’s economy, contributing nearly 25% to the Gross Domestic Product (GDP) and employing around 70% of the populace. However, its productivity is limited by outdated agricultural methods, climate variability, and insufficient access to resources. While agriculture acts as a key livelihood source, trading agricultural products provides remarkable opportunities for Ugandans to increase their incomes and enhance their quality of life. Simultaneously, rising urbanization and the expansion of the informal sector introduce new possibilities for income generation, although job security often remains unstable (World Bank, 2023) . This emphasizes the necessity for investment in skills development and support for households to mitigate income volatility in the face of economic challenges.

1.2 Statement of the Problem

Income diversification is widely acknowledged as a vital strategy for improving household economic resilience and alleviating poverty, especially in low-income nations like Uganda (Ellis, 2000). In most developing economies such as Uganda, households rarely depend on a single source of income; instead, they combine farming, small businesses, casual labour, wage employment, and remittances to reduce vulnerability to economic, environmental, and social shocks. This strategy is particularly important in contexts characterized by uncertain agricultural productivity, limited formal employment opportunities, and fluctuating market conditions. By diversifying income sources, households are able to spread risk, smooth consumption over time, and improve their resilience against shocks such as drought, illness, or price instability. Consequently, income diversification is widely recognized as a key livelihood strategy that contributes to poverty reduction and improved household welfare.

Agriculture is critically important to Uganda's economy, providing the primary source of livelihood for the majority of the population (about 70%) and contributing significantly to the GDP (around 24%). It is crucial for poverty reduction, food security, and generating foreign exchange through exports. As of 2024, around one-third (33.1%) of households in Uganda were engaged in the subsistence economy, with a considerable majority of all households continuing to depend on agriculture (UBOS, 2021b), it highlights the background for income diversification.

The most recent UNHS (2023/24) indicates that while agriculture remains the dominant main income source for about 52.8% of households, a substantial proportion of households engage in non-farm activities and multiple income sources, implying that income diversification is widely prevalent in Uganda even though it is not directly reported as a single indicator.

Empirical research indicates that households with diversified income streams exhibited greater resilience during the pandemic, experiencing less severe income reductions compared to those reliant solely on agriculture (Khan & Morrissey, 2023). This highlights the protective function of income diversification in alleviating the effects of economic and environmental disruptions. However, the exact problem this study addresses is the lack of empirical comprehension regarding the comprehensive factors influencing household income diversification using multivariate analysis. While numerous studies have investigated individual elements like asset ownership or education, few have concurrently examined the complete range of demographic,

socioeconomic, and financial factors. Furthermore, existing analysis often rely on binary poverty categories; this study utilizes wealth quintiles (poorest to richest) to provide a nuanced understanding of economic status. Crucially, there is a need to clarify whether diversification is beneficial or detrimental in this context; literature suggests it is beneficial for resilience but may indicate distress-driven survival strategies for the poorest (Ellis, 2000; Khan & Morrissey, 2023). This study fills the gap by analyzing how access to credit (rather than just borrowing) and other determinants influence diversification across different wealth strata.

The study is also in line with the Sustainable Development Goal (SDG) 10 advocates for the reduction of inequalities affecting the bottom 40 percent of the population by the year 2030 (UN, 2015). In this regard, it is essential to comprehend the factors influencing income diversification, as this understanding is vital for promoting equitable economic growth.

As a result, this study was intended to give multivariate analysis that encompasses the factors that determine income diversification especially in a national context where households continue to face challenges like poverty and shocks.

1.3. Objectives of the study

1.3.1. Main objective

The main aim of this research was to examine the factors that influence the income diversification in Uganda.

1.3.2. Specific objectives

Specifically, the study aimed at achieving the following objectives

i. To investigate how demographic and socioeconomic factors (gender, age, household size, wealth quintiles, and region) influence income diversification.
ii. To analyze the effect of ownership of assets on income diversification.
iii. To analyze the effect of access to credit on income diversification.

1.4. Hypotheses

i. Region is not associated with income diversification in Uganda.
ii. Household size is not associated with income diversification in Uganda.
iii. No Ownership of assets is not associated with income diversification.
iv. Lack of Access to credit is not associated with income diversification.

1.5. Significance of the study

This research is crucial as it aimed to enhance our comprehension of how households diversify their income and its contribution to building economic resilience among rural, semi-urban, and urban families in Uganda. The study transcends conventional models that typically neglect or simplify income sources, recognizing the intricate livelihood strategies that households employ to shield themselves from economic shocks, alleviate poverty, and improve financial stability.

Considering the widespread susceptibility to poverty and the restricted availability of formal employment options nationwide (World Bank, 2024) the insights gained from this study could be invaluable for policymakers, development organizations, and financial institutions. In particular, the findings could guide targeted initiatives that promote diverse income-generating activities, tackle obstacles to non-farm employment, and broaden access to financial resources that enhance household economic security. Furthermore, utilizing a logistic regression model facilitates the examination of factors that affect household participation in specific income diversity categories, adding methodological strength to our understanding of livelihood strategies across various income generating activities.

The findings of this research could also have wider implications for other areas with comparable socio-economic and agricultural characteristics, rendering it a significant resource for comparative analyses in income diversification aimed at promoting rural and national development throughout Uganda.

1.6. Theoretical Framework

This research is based on the Sustainable Livelihoods Framework (DFID, 1999), which elucidates how households utilize their assets human, social, natural, physical, and financial capital to implement livelihood strategies such as income diversification in response to vulnerabilities and opportunities. In the context of Uganda, demographic factors (age, region, household size) signify human and social capital, whereas asset ownership denotes essential productive resources that facilitate diversification. Borrowing and government initiatives are perceived as external institutional factors (transforming structures) that can either bolster or impede livelihood strategies. The SLF provides insight into why households that are asset-rich and demographically privileged are more inclined to diversify, while inadequately designed programs or mere access to credit do not effectively instigate change, underscoring that sustainable diversification relies on the interplay between household endowments and conducive institutional frameworks.

1.7. Conceptual framework

Income diversification is increasingly acknowledged as a vital pathway to enhancing household economic resilience, especially in agrarian economies that are susceptible to climate variability, market shocks, and structural inequalities (Wan et al., 2016). At the household level, the ability to seek out diversified income sources is influenced by a range of independent variables derived from three primary domains: demographic indicators, socioeconomic indicators, and financial indicators, all of which reflect the household's endowment of livelihood assets. Demographic characteristics such as household size, dependency ratio, age structure, gender composition, marital status, education level, migration status, and ethnic or indigenous identity affect labor availability, consumption needs, and social positioning (Chakrabarty & Mukherjee, 2022). Socioeconomic factors, including income level and sources, asset ownership, housing quality, employment status, access to services, social inclusion/exclusion, and food security status, further influence baseline welfare and adaptive capacity (Khan & Morrissey, 2023).

Financial indicators such as savings, credit access, financial inclusion, expenditure patterns, and exposure to financial risks lowers entry barriers to non-farm activities and facilitate investment in livelihood transitions (Tadele, 2021).

The ability to diversify income is influenced by a combination of demographic, socioeconomic, and financial elements that together dictate a household's access to and management of livelihood resources.

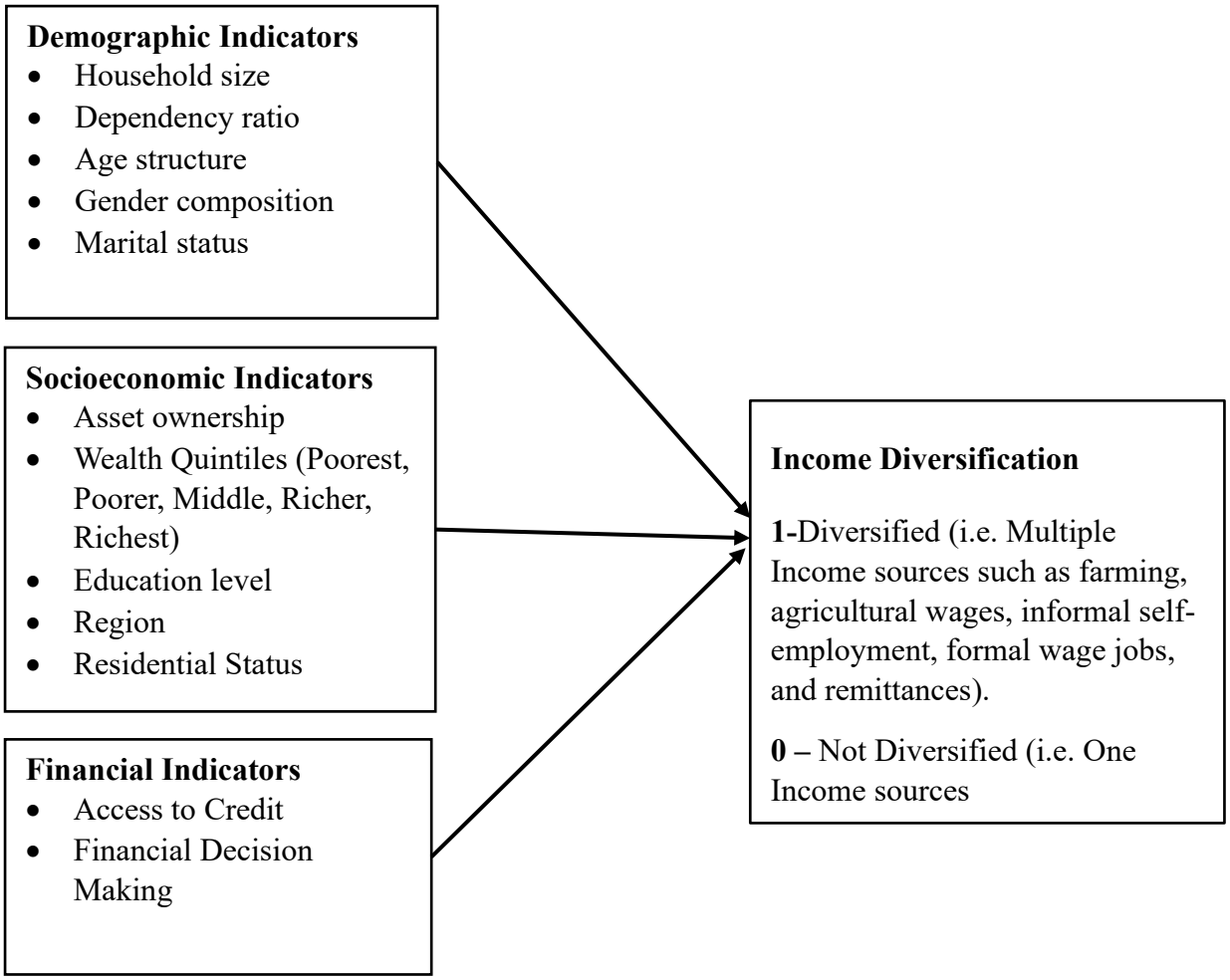

Figure 1. 1: Conceptual Framework.

Source: Adapted from (Chakrabarty & Mukherjee, 2022; *Khan & Morrissey, 2023;*Wan et al., 2016; Tadele, 2021)

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter provides a review of the existing literature concerning the factors influencing household income diversification, particularly focusing on Uganda and similar contexts within Sub-Saharan Africa. It explores how socio-demographic, socio-economic, geographic, financial, and institutional elements affect households' capacity to participate in various income-generating activities. By integrating empirical data and theoretical viewpoints, this review highlights significant trends, inconsistencies, and critical deficiencies, especially the scarce application of multivariate analytical methods in the Ugandan setting. The chapter concludes by situating this research within the wider conversation on sustainable livelihoods, resilience, and poverty alleviation.

2.2 Conceptualizing Income Diversification

Household income diversification is defined as the involvement in various economic activities, both on-farm (such as crop and livestock production) and off-farm (including wage labor, petty trade, remittances, and services), to derive income from diverse sources (Liyew & Damtie, 2024) . It is broadly acknowledged as an essential strategy for reducing vulnerability to economic, climatic, and market disruptions, thereby enhancing household resilience and improving overall welfare (Abebe et al., 2021). In agrarian economies like Uganda, where more than 60% of the population relies on rain-fed agriculture (UBOS, 2020), diversification acts as both a coping strategy and a means of facilitating structural transformation (World Bank, 2021). Evidence indicates that households with diversified income sources not only achieve higher total income (Mengistu & Belda, 2024) but also cultivate skills, build assets, and secure improved access to markets, which are vital elements of long-term economic resilience.

2.3 Theoretical Framework

This research is grounded in the Sustainable Livelihoods Framework (SLF), which asserts that households utilize five types of capital human, social, natural, physical, and financial to develop livelihood strategies that bolster resilience and mitigate vulnerability to shocks such as climate variability, economic downturns, and conflict (Kuang et al., 2019) .

In rural Uganda, the availability of these assets influences the extent and effectiveness of income diversification. For example, human capital (education, health, skills) allows for

engagement in non-farm employment; financial capital (savings, credit) aids in the initiation of enterprises; physical capital (roads, electricity) enhances access to markets; and social capital (networks, group membership) facilitates the flow of information and collective action (Addai et al., 2023) . Empirical research conducted in China and South Africa demonstrates that households with more substantial endowments across these capitals are more inclined to pursue diversified livelihoods (Kuang et al., 2019; Mbewana & Kaseeram, 2024). Therefore, the SLF offers a comprehensive perspective to examine how combinations of assets not merely isolated factors affect diversification outcomes in Uganda.

2.4 Socio Demographic Determinants

2.4.1 Age Structure

The impact of age on diversification presents a mixed picture. Older heads of households may possess greater experience and accumulated assets, but they frequently encounter diminishing physical capabilities and heightened risk aversion, which may reduce their propensity to pursue new ventures (Chinalurum et al., 2024). In contrast, Mbewana and Kaseeram (2024) identified a positive correlation between age and diversification solely among high-income quantiles in South Africa, indicating context-dependent effects.

Recent studies in Uganda have revealed no significant relationship between age and diversification in bivariate analyses (Kansiime et al., 2020), but multivariate studies controlling for other factors are limited. Youth (ages 18-30) may be more inclined to diversify due to higher risk tolerance, increased mobility, and better digital literacy, though they may lack capital and experience (Mbewana & Kaseeram, 2024).

2.4.2 Gender Composition

Households led by males are typically more inclined to diversify, benefiting from improved access to land, credit, and social networks (Memon et al., 2020). Gender norms frequently limit women's mobility and their involvement in non-traditional sectors, thereby constraining their diversification opportunities (Mbewana & Kaseeram, 2024).

Nevertheless, in certain contexts, female-headed households may diversify out of necessity rather than opportunity, engaging in low-return activities to meet basic needs (Kansiime et al., 2020). The relationship between gender and diversification in Uganda requires further multivariate analysis to disentangle the effects of gender from other correlated factors such as asset ownership and education.

2.4.3 Household Size

Household size represents the total number of household members and is a critical determinant of labor availability and consumption needs. Polygamous or larger households tend to diversify more due to increased labor availability and the ability to allocate members to different activities (Kansiime et al., 2020). This supports the labor endowment hypothesis, which posits that larger households can simultaneously engage in farming while pursuing non-farm activities.

However, some research suggests that larger households may focus on farming to satisfy subsistence needs, particularly when land is abundant and labor is the primary constraint (Chinalurum et al., 2024). In Uganda, Kansiime et al. (2020) established that household size significantly enhances the odds of diversification, supporting the labor endowment hypothesis. Yet, these findings were based on bivariate analysis, and the independent effect of household size when controlling for other factors remains understudied.

2.4.4 Household Dependency Levels

The dependency ratio, calculated as the ratio of dependents (those aged <15 or >64) to the working-age population (aged 15-64), reflects the economic burden on productive household members. A high dependency ratio may constrain diversification by limiting the resources available for investment in non-farm activities and increasing the need for immediate income from familiar sources like agriculture(Chakrabarty & Mukherjee, 2022).

Conversely, high dependency ratios may also push households to diversify as a coping mechanism to meet increased consumption needs (Khan & Morrissey, 2023). Despite its theoretical importance, the dependency ratio has been largely neglected in previous studies on income diversification in Uganda, representing a significant gap in the literature that this study addresses.

2.4.5 Marital Status

Marital status influences household structure, labor availability, and access to resources, thereby affecting diversification decisions. Married monogamous households may benefit from spousal labor and resource pooling, facilitating diversification (Kansiime et al., 2020). Polygamous households, with multiple adults and potentially more labor, may have even greater capacity to diversify across multiple activities.

Conversely, widowed or divorced/separated households may face resource constraints and labor shortages, yet they often diversify out of necessity to compensate for the loss of a spouse's income or labor (Muhumuza & Namahe, 2021). In post-conflict Northern Uganda, Kansiime et al. (2020) found that female-headed households, including widows, exhibited higher rates of diversification, though often into low-return activities. The independent effect of marital status on diversification, controlling for other socioeconomic factors, requires further investigation in the Ugandan context.

2.4.6 Education Level

Education is a critical component of human capital that influences diversification through multiple pathways. Higher education fosters market awareness, entrepreneurial capabilities, numeracy skills, and access to formal employment, thereby enhancing diversification potential(Liyew & Damtie, 2024). Educated individuals are better equipped to identify and exploit non-farm opportunities, manage enterprises, and adapt to changing market conditions.

However, in rural Uganda, formal education by itself seldom leads to non-farm opportunities due to underdeveloped labor markets and limited job creation a significant limitation highlighted byAtuhurra and Muhumuza (2019).

Muhumuza and Namahe (2021) demonstrated that even basic education (primary completion) in rural Uganda enhances access to non-farm employment through improved numeracy and market participation, though the returns to education are lower in rural areas compared to urban settings. The relationship between education and diversification may be non-linear, with primary education having different effects than secondary or tertiary education. Most existing studies in Uganda have not adequately examined these nuanced relationships using multivariate methods.

2.5 Socioeconomic Indicators

2.5.1 Asset Ownership

Assets such as land, livestock, and durable goods offer collateral, security, and capital for investment in non-farm activities. Households with greater asset endowments are theoretically more inclined to diversify due to their enhanced capacity to bear risks and invest in new ventures(Borku et al., 2024). Assets can be liquidated or used as collateral to finance non-farm enterprises, and they provide a safety net that encourages risk-taking.

Nevertheless, extensive landholdings may deter off-farm work if agricultural activities remain lucrative, creating an opportunity cost for diversification (Giefer & An, 2022). In Uganda, Atuhurra and Muhumuza (2019) found that ownership of assets significantly boosts income diversification, more so than income level itself. However, Musumba et al. (2022) argue that in rural Africa, entering non-farm activities often requires minimal capital and is more dependent on social capital, labor, and market access than on physical asset holdings. The mixed findings suggest that the type, quality, and liquidity of assets may matter more than simple ownership, a nuance that binary asset ownership variables fail to capture. This study examines asset ownership as a binary variable while acknowledging this limitation.

2.5.2 Wealth Quintiles

Wealth status, typically measured through asset-based indices or consumption expenditure, is a critical determinant of diversification capacity. Most existing studies in Uganda have used binary poverty categories (poor/non-poor), which mask important heterogeneity within these groups(Khan & Morrissey, 2023).

This study employs wealth quintiles (poorest, poorer, middle, richer, richest) to provide a more nuanced understanding of how economic status influences diversification. The poorest households may diversify out of necessity into low-return activities, while the richest may diversify opportunistically into high-return ventures(Ellis, 2000). Middle-wealth households may face different constraints and opportunities altogether.

Evidence from Sub-Saharan Africa suggests a U-shaped relationship between wealth and diversification, with both the poorest and richest diversifying more than middle-wealth households, though for different reasons(Wan et al., 2016). The use of wealth quintiles rather than binary categories represents a methodological improvement that allows for more targeted policy recommendations.

2.5.3 Region

Geographic location significantly influences diversification opportunities through variations in infrastructure, market access, agro-ecological conditions, and historical investment patterns. Khan and Morrissey (2023) emphasized that geographic location has a substantial effect on access to non-farm opportunities in Uganda, with regional disparities reflecting differences in road networks, electrification, proximity to markets, and presence of economic hubs.

The Central region, containing the capital Kampala, typically exhibits better infrastructure and more diverse economic opportunities compared to other regions (World Bank, 2021). The Eastern region has shown high rates of diversification, potentially due to high population density and land fragmentation pushing households into non-farm activities(Kansiime et al., 2020). The Northern region, recovering from decades of conflict, faces unique challenges and opportunities shaped by post-conflict reconstruction programs (Atuhurra & Muhumuza, 2019). The Western region's diversification patterns remain understudied, with limited research examining the specific constraints and enablers in this region. Regional dummy variables allow this study to capture these geographic disparities while controlling for household-level characteristics, providing insights into whether regional differences persist after accounting for individual and household factors.

2.5.4 Residential Status

Residential status whether a household is located in an urban or rural area fundamentally shapes access to markets, infrastructure, services, and non-farm employment opportunities. Urban households typically benefit from proximity to diverse labor markets, financial institutions, better infrastructure, and higher population density, which theoretically increases their capacity to diversify into non-farm activities(Khan & Morrissey, 2023).

In contrast, rural households often face structural barriers to diversification, such as limited access to markets, inadequate infrastructure, and isolation (Borku et al., 2024). However, rural households may also diversify out of necessity due to land constraints, climate shocks, or agricultural income volatility (Musumba et al., 2022). Being close to markets lowers transportation expenses and facilitates engagement in trade and services (Liyew & Damtie, 2024), while access to roads, electricity, and mobile networks broadens opportunities for off-farm employment and digital entrepreneurship (Iqbal et al., 2021). In Uganda, urban households despite exhibiting lower diversification rates in certain studies often enjoy higher quality non-farm opportunities with better returns compared to rural households (World Bank, 2021). The blurring lines between rural and urban economies in peri-urban areas further complicate this binary distinction. Despite its importance, residential status has been largely neglected in previous multivariate studies on income diversification in Uganda, representing a gap this study addresses.

2.6 Financial Indicators

2.6.1 Access to Credit

Access to credit is a critical financial enabler that can alleviate liquidity constraints and support investment in new business ventures, inputs, or assets necessary for diversification (Liyew & Damtie, 2024). Credit allows households to smooth consumption during lean periods, invest in higher-return activities, and manage risks associated with trying new enterprises.

However, the effectiveness of credit depends on its application whether for productive investment or consumption smoothing (Chakrabarty & Mukherjee, 2022). In Uganda, informal credit is frequently utilized for survival rather than for enterprise development, limiting its transformative potential (Barungi & Namahe, 2020). Formal credit sources (banks, SACCOs) may have different effects compared to informal sources (friends, family, money lenders), though this distinction is not always captured in household surveys.

Access to credit may also be endogenous to diversification households already engaged in multiple activities may be more likely to seek credit, or lenders may prefer to lend to diversified households with multiple income streams. This study acknowledges this potential endogeneity while examining the association between credit access and diversification using multivariate methods.

Empirical evidence from Uganda suggests that access to credit significantly enhances the participation of rural households in trading, services, and small enterprises (Atuhurra & Muhumuza, 2019), though the magnitude of this effect when controlling for other factors requires further investigation.

2.6.2 Financial Decision-Making

Financial decision-making dynamics within households whether decisions are made individually, jointly, or consultatively represent an often-overlooked aspect of financial capital that influences diversification outcomes. Joint or consultative financial decision-making may enhance diversification by pooling information, reducing risk through collective deliberation, and ensuring commitment from multiple household members (Atuhurra & Muhumuza, 2019).

Inclusive decision-making may also reflect broader patterns of household governance and social capital, which facilitate collective action and resource mobilization (Addai et al., 2023). Conversely, individual decision-making may enable faster responses to opportunities but may also concentrate risk and limit the diversity of perspectives considered.

Despite its theoretical importance, financial decision-making has been largely neglected in previous studies on income diversification in Uganda. This study includes financial decision making as a key variable, distinguishing between individual, joint/consultative, and other decision-making arrangements to examine their association with diversification outcomes.

2.7 Summary and Research Gap

The existing literature consistently recognizes income diversification as a crucial resilience strategy within agrarian economies. Studies identify significant drivers like assets, savings, education, market access, and household structure and emphasizes the importance of the Sustainable Livelihoods Framework in elucidating how capital endowments influence livelihood choices. However, notable gaps persist in the Ugandan context;

i. Majority of studies depend on bivariate analysis or fixed effects models that do not adequately isolate the independent impacts of multiple co-occurring factors (e.g., assets, credit, conflict exposure) on the probability of diversification.

ii. Limited research investigates the influence of residential status, financial decision-making, or savings culture elements emphasized in recent national surveys.

CHAPTER THREE
METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used in the study. It focused on both descriptive and inferential statistical analyses to provide a comprehensive understanding of how various demographic, geographical, and financial factors influence household income diversification. The section outlines the research design, data sources, sampling methods, variables, and analytical techniques that will be used to achieve the research objectives.

3.2. Source of data

The data for this study was obtained from the Uganda National Household Survey (UNHS) 2019/2020. This nationally representative survey was conducted by the Uganda Bureau of Statistics (UBOS) and provides detailed information on household characteristics, living standards, and economic activities. The UNHS dataset includes a wide range of variables related to household demographics, socioeconomic, income sources, education, asset ownership, and borrowing or access to credit, making it highly suitable for analyzing income diversification patterns (UBOS, 2021). The dataset includes responses from both rural and urban households, capturing a comprehensive picture of the economic activities and diversification strategies within the country.

3.3 Target population and inclusion criteria

According to the 2024 National Population and Housing Census results released by the Uganda Bureau of Statistics (UBOS), there are 10,698,913 households in Uganda from 7.3 million households reported ten years prior (2014), with an average household size of approximately 4.2 people. The UNHS survey dataset comprised of a total sample of 15,786 households and 13,732 households were successfully interviewed.

3.4. Sampling design and sample size

The sample selection for this study was restricted to 2,795 households with complete information on predictor variables (i.e. Household income sources) to provide the foundation for assessing the determinants of household income diversification.

3.5 Description of Study Variables

3.5.1. Dependent variable

The outcome variable for this study was household income diversification, categorized into two categories i.e. income diversified (those with more than one sources) and none income diversified (those with one or no source). The groups are designed to capture the range of economic activities households engage in, from traditional agriculture to non-agricultural income streams. Some of the income sources are often external, providing supplementary income that can help stabilize household finances.

3.5.2. Independent variables

The independent variables included; age, gender, marital status, household size, region, residence, asset ownership, wealth quintiles, access to credit and financial decision making.

Table 3. 1: Description of the variables that will be used

CATEGORY	VARIABLE NAME	DESCRIPTION
DEPENDENT VARIABLE		
Income Diversification	income_div	Binary: 1 = ≥2 income sources (farming, wages, enterprise, remittances); 0 = single source
DEMOGRAPHIC INDICATORS		
Age Structure	age_cat	Categorical:(18-30,31-43,44-56,57-69 70+)
Gender of Household Head	sex_hh	Binary: 1 = Male-headed; 2 = Female-headed household
Marital Status	marital_stat	Categorical: Married monogamous (ref), Polygamous, Widowed, Divorced/Separated, never married
Household Size	hsize_cat	Categorical: <5 members vs. ≥5 members
Dependency Ratio Category	dep_cat	Categorical: (# ratio <0.49 vs. >0.5
SOCIOECONOMIC INDICATORS		
Education Level	edu_cat	Categorical: No formal (ref), Some Primary, Completed Primary, Secondary+, Don't Know
Wealth Quintiles	wealth_q	Categorical: Poorest, Poorer, Middle, Richer, Richest [asset-based index]
Region	Region	Categorical: Central (ref), Eastern, Northern, Western
Residential Status	res_status	Binary: 0 = Rural; 1 = Urban
Asset Ownership	asset_own	Binary: 1 = Owns ≥1 productive/durable asset; 0 = None
FINANCIAL INDICATORS		
Access to Credit	credit_acc	Binary: 1 = Accessed credit (formal/informal) in last 12 months; 0 = No
Financial Decision-Making	fin_dec	Categorical: Individual (ref), Joint/Consultative, Others decide

3.6 Data management and analysis

Data was managed and analyzed using Stata/SE 17. Analysis was done at mainly two levels, the bivariate and the multivariate levels.

3.6.1. Univariate analysis

An assessment of the characteristics of the respondents using frequency distribution for all the variables including the dependent

3.6.2. Bivariate Analysis

At this stage of the analysis, Pearson Chi-square test was used to assess the association between each predictor variable and the outcome variable (household income diversification). This helped identify potential predictors for further investigation. Predictor variables that demonstrate statistical significance at the 5% level ($p < 0.05$) was retained for multivariate analysis. Variables with a p-value less than 0.05 in the Pearson Chi-square test was considered relevant for inclusion in the multivariable model, as they show a statistically significant association with the outcome variable. The Pearson Chi-square test statistic is generally described as:

$$\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \quad \ldots\ldots\ldots \quad (i)$$

Where;

O_{ij} = Observed frequency in the i^{th} row and j^{th} column

E_{ij} = Expected frequency in the i^{th} row and j^{th} column

$(r-1)(c-1)$ is the degrees of freedom where c is the number of categories of the dependent variable and r is the number of levels of the independent variable (s).

3.6.3. Logistic Regression Analysis

The dependent variable examined in this research, Income Sources Diversification, is a binary variable defined as 0 for households relying on a single income source and 1 for those with two or more income sources. The results are presented as odds ratios (OR), which indicate how

changes in the independent variables are associated with the odds of a household diversifying its income sources.

Logit Model

$$\log\left(\frac{\widehat{P}}{1-\widehat{P}}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_p X_p \quad \ldots\ldots\ldots\ldots \quad \text{(ii)}$$

Where:

$\widehat{P}$: Probability of having income diversified (…)

β_0- Intercept

$\beta_1 \ldots \beta_p$ - are the coefficients estimated for each variable $x_1 \ldots x_p$

3.6.3 Model diagnostics

The Hosmer-Lemeshow and Multicollinearity tests were performed and provided in APPENDIX 1. The Hosmer-Lemeshow test returned non-significant p-value (p =0.4) indicating that there is no significant difference between the observed and predicted values, implying a good model fit. Conversely, the Multicollinearity test using VIF showed no serious multicollinearity, as all values are below 5 (maximum VIF = 3.60) and the mean VIF is 1.91, indicating that the regression estimates are stable and reliable.

3.7. Ethical Consideration

This study used secondary data from the Uganda National Household Survey 2019/20 which is accessible to all stakeholders. Permission to download and use this data was obtained from UBOS. Individual information from the subjects was kept confidential during and after data analysis and any piece of information and communication concerning the research study was done only in line with the objectives of the study.

3.8. Limitations of the Study

This study was depended on the UNHS survey which was based on the selected household population but excluded the population in institutions, refugee camps, forest reserves, police and army barracks, and other special areas.

CHAPTER FOUR
PRESENTATION OF RESULTS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents and interprets the results of Bivariate analysis, Logistic Regression Analysis to examine the determinants of household income diversification in Uganda. The discussion of results has also been included alongside presentation of results and interpretation accordingly.

4.1 Bivariate Analysis

The analysis below illustrates the outcomes of bivariate analyses that investigate the relationship between income diversification and essential independent variables, utilizing chi-square tests of independence.

Table 4. 1: Distribution of Respondents by Household Factors

Variable	Category	N	% Diversified		Pearson chi2 p-value
			Yes	No	
Household Size	Below5	1249	60.43	39.57	0.000
	Above5	1546	70.4	29.6	
Region	Central	785	61.42	38.58	0.000
	Eastern	989	82.97	17.03	
	Northern	661	74.77	25.23	
	Western	360	39.6	60.4	
Age Structure	18-30	1,133	73.44	26.56	0.002
	31-43	575	51.57	35.07	
	44-56	425	57.89	42.11	
	57-69	401	55.94	44.06	
	70+	261	59.57	40.43	
Gender	Male	1061	67.67	32.33	0.028
	Female	1734	64.34	35.66	
Dependency Ratio Category	Low Dependency	1,400	50.08	49.92	0.023
	High Dependency	1,395	49.91	50.09	
Marital Status	Married monogamous	1078	64.51	35.49	0.000
	Married polygamous	287	75.13	24.87	
	Divorced/Separated	276	48.34	51.66	
	Widow/Widower	1079	70.85	29.15	

	Never married	75	64.66	35.34	
Education Status	No formal education	964	53.67	46.33	0.000
	Some Primary	1069	68.18	31.82	
	Completed Primary	214	76.98	23.02	
	Some O' Level	268	72.43	27.57	
	Completed O' Level & Above	280	66.35	33.65	
Residential Status	Rural	2080	64.72	35.28	0.042
	Urban	715	68.16	31.84	
Wealth Quitiles	Quintile 1	541	59.93	40.07	0.000
	Quintile 2	534	63.77	36.23	
	Quintile 3	544	66.16	33.84	
	Quintile 4	555	68.24	31.76	
	Quintile 5	621	71.75	28.25	
Asset Ownership	No	2162	65.1	34.9	0.232
	Yes	633	67.2	32.8	
Access to Credit	Yes	226	84.33	15.67	0.000
	No	2569	64.31	35.69	
Financial Decision Making	Individual (self)	1166	59.92	40.08	0.000
	Joint/Consultative	1492	70.48	29.52	
	Others decide	137	68.5	31.5	

Households headed by widows/widowers (70.9%) and those in polygamous arrangements (75.1%) show high levels of diversification, whereas divorced or separated households have the lowest rate (48.3%). This points to social and economic coping strategies that are associated with household structure ($p = 0.000$). Urban based households showed a greater tendency to diversify incomes (68.2%) compared to (64.7%) rural households ($p = 0.042$).

Regional disparities are significant: Eastern Uganda exhibits the highest diversification rate at 82.97%, whereas the Western region falls behind at 39.6%. This observation is consistent with the findings of Khan and Morrissey (2023), who indicated that geographic location has a substantial effect on access to non-farm opportunities, influenced by variations in infrastructure, market integration, and historical investment (Khan & Morrissey, 2023).

Education shows a positive correlation with diversification, reaching its peak at the completion of primary education (76.98%). Muhumuza and Namahe connect higher educational attainment in rural Uganda to better employment outcomes and increased engagement in non-farm activities, as education fosters market literacy and mobility.

The wealth quintiles reveal a counterintuitive yet well-documented trend; wealthy households tend to diversify more (71.85%) than their counterparts. This phenomenon reflects necessity-driven diversification, as highlighted by Kansiime, Namahe, and Muhumuza (2020) in post-conflict Northern Uganda, where income levels force households to pursue multiple sources of livelihood for survival (Muhumuza & Namahe, 2021).

Financial inclusion serves as a crucial factor. Likewise, 84.3% of households that access to credit/loans diversified their incomes compared to the counterparts (64.3%). This aligns with the research of Chakrabarty and Mukherjee (2022), which illustrates that access to both formal and informal financial services reduce barriers to entry for non-farm activities by facilitating investment and risk management (Chakrabarty & Mukherjee, 2022). In the context of Uganda, Atuhurra and Muhumuza (2019) affirm that access to credit/loans behaviors significantly enhance the participation of rural households in trading, services, and small enterprises (Atuhurra & Muhumuza, 2019).

Conversely, asset ownership does not exhibit a significant correlation ($p = 0.232$). This indicates that in Uganda's economy, liquid financial resources and labor flexibility are more critical than physical assets, a conclusion that aligns with broader evidence from Musumba et al. (2022), who argue that non-farm diversification in rural Africa is frequently initiated with minimal capital through social networks and micro-enterprises (Musumba et al., 2022).

4.3 Multivariate Analysis

The multivariate analysis shows binary logistic regression to determine the independent factors influencing income diversification among households in Uganda. This model accounts for various socio-demographic, economic, and institutional variables simultaneously, facilitating the calculation of adjusted odds ratios (OR) that reflect the impact of each predictor while considering possible confounding variables. The dependent variable, income diversification, is categorized as binary: 0 = "No" 1 = "Yes".

4.3.1 Logistic Model Results

The findings presented below show results of weighted logistic regression model that assesses the factors that determine household income diversification in Uganda. The dependent variable is assigned a value of 1 if a household participates in two or more income sources (diversified) and 0 if it has one income source.

Table 4. 2: Predictors of Income Diversification: Logistic Regression Results.

Variable	Category	AOR	P>|t|	95% CI
Dependency Ratio Category	*ref: low Dependency*			
	High Dependency	1	0.89	[0.96,1.05]
Hsize Category	*ref: Below5*			
	Above5	1.2	0.78	[0.37,3.76]
Region	*ref: Central*			
	Eastern	1.7	0.37	[0.53,5.55]
	Northern	1.1	0.89	[0.31,3.87]
	Western	0.3	0.05**	[0.1,1]
Age Structure	*Ref:18-30 (youth)*			
	30+(Adults)	0.1	0.01**	[0.01,0.49]
Sex	*Male (ref)*			
	Female	2.6	0.13	[0.75,9.21]
Marital Status	*ref: Married monogamous*			
	Married polygamous	2.7	0.11	[0.81,8.91]
	Divorced/Separated	1.4	0.65	[0.34,5.58]
	Widow/Widower	6.9	0.01**	[1.6,30.15]
	Never married	1	0.99	[0.12,8.72]
Education Level	*ref: No formal education*			
	Some Primary	1.6	0.51	[0.4,6.45]
	Completed Primary	4.5	0.05**	[1.01,20.45]
	Some O' Level	3.7	0.15	[0.62,22.28]
	Completed O' Level and above	1.2	0.86	[0.2,6.91]
Residential Status	*ref: Rural (0)*			
	Urban (1)	1	0.98	[0.34,2.81]
Wealth Quintiles	*ref: Quintile 1*			
	Quintile 2	1.4	0.58	[0.47,3.93]
	Quintile 3	1	0.22	[0.27,0.97]
	Quintile 4	0.1	0.01**	[0.01,0.47]
	Quintile 5	4.5	0.01**	[1.41,14.17]
Asset Ownership	*ref: No assets (0)*			
	Has assets (1)	1.2	0.34	[0.86,1.55]
Financial Decision Making	*ref: Individual (self)*			
	Joint/Consultative	3.5	0.02**	[1.2,9.96]
	Others decide	2.2	0.45	[0.28,17.49]
_cons	(Intercept)	21.6	0.06	[0.92,503.75]

Note: (*) significant at 10%; (**) significant at 5%; (***) significant at 1%

4.3.2.1 Demographic and Socioeconomic Factors

Several demographic and socioeconomic factors exhibit statistically significant correlations with income diversification.

4.3.2.1.1 Age Structure

Adults aged 30 and above have 90% lower odds of diversifying their income compared to younger individuals aged 18 to 30 (AOR = 0.1, p = 0.01). This indicates that younger heads of households are more inclined to participate in non-farm activities, potentially due to higher risk tolerance, increased mobility, or better digital literacy. This observation is consistent with the findings of Musumba et al. (2022), who highlighted that youth in rural Africa are more likely to pursue off-farm entrepreneurship.

4.3.2.1.2 Marital Status

Individuals who are widowed have 6.9 times greater odds of diversifying their income compared to those in married monogamous households (p = 0.01). This reflects a coping mechanism in the face of vulnerability losing a spouse often necessitates reliance on multiple income streams. Kansiime, Namahe, and Muhumuza (2020) note similar trends in post-conflict Northern Uganda, where households led by women diversify out of necessity.

4.3.2.1.3 Education level

Households that have completed primary education possess 4.5 times higher odds of diversification compared to those without any formal education (p = 0.05). This finding supports the work of Muhumuza and Namahe (2021), who demonstrate that even basic education in rural Uganda enhances access to non-farm employment through improved numeracy and market participation.

4.3.2.1.4 Wealth Quintiles

Households classified as wealthy have 4.5 times higher odds of diversifying their income compared to non-poor households (p = 0.01). This reinforces the concept of necessity driven diversification a well-established phenomenon in agrarian economies where income instability drives households to seek alternative sources of livelihood (Khan & Morrissey, 2023).

4.3.2.1.5 Region.

Western region exhibits a 70% reduction in the odds of diversification (AOR = 0.3, p = 0.05). Since the p-value is precisely at the threshold, this aligns with the findings of Khan and Morrissey (2023), who emphasizes the gaps in infrastructure and market access in western Uganda.

4.3.2.1.6 Household Size, Gender and Dependency Ratio

Household size, gender, dependency ratio and urban rural location do not show statistical significance ($p > 0.05$), indicating that although they may descriptively influence diversification (as observed in bivariate analysis), their impact does not remain significant when other factors are controlled for.

4.3.2.2 Asset Ownership

Asset ownership does not demonstrate a significant effect (AOR = 1.2, p = 0.34). This suggests that possessing physical assets (such as land, livestock, and durable goods) does not enhance the likelihood of income diversification within this model. This conclusion is consistent with the work of Musumba et al. (2022), who contend that in rural Africa, entering non-farm activities typically requires minimal capital and is more dependent on social capital, labor, and market access than on asset holdings. In Uganda's informal economy, liquidity and social networks may be more critical than fixed assets.

4.3.2.3 Access to Credit/Loans

No access to credit/loans is linked to a 90% reduction in the likelihood of diversification when compared to those who do borrow (AOR = 0.1, p = 0.01). In other words, individuals who borrow possess 10 times greater odds of diversifying their income. This factor highlights that access to credit serves as a vital facilitator of income diversification. Credit alleviates liquidity constraints, enabling households to invest in small-scale trade, necessary inputs, or minor enterprises. This aligns with the findings of Chakrabarty & Mukherjee (2022), who illustrate that financial inclusion especially access to credit reduces barriers to entry for non-farm activities by promoting investment and stabilizing consumption.

Furthermore, joint or consultative financial decision-making enhances the odds of diversification by 3.5 times (p = 0.02), indicating that inclusive governance within households

strengthens economic resilience a conclusion that is consistent with findings from Atuhurra and Muhumuza (2019) in rural Uganda.

CHAPTER FIVE
SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This chapter Discusses the findings of the study in relation to each of the study's specific objectives and hypothesis, offering meaningful insights grounded in both data and real-life contexts.

5.2. Summary of the findings

5.2.1 Demographic and socioeconomic factors

The research indicated that age, marital status, education level, poverty status, and geographical region have a significant effect on income diversification. In particular, younger heads of households (aged 18–30) were considerably more inclined to diversify their income compared to those aged 31 and older age groups. Households led by widows or widowers demonstrated a notably higher level of diversification than those in married monogamous arrangements. Achieving primary education substantially enhanced the likelihood of diversification. Households classified as poor were more prone to diversify than their non-poor counterparts, suggesting that their strategies were driven by necessity. The region also played a crucial role: households located in the Western region had significantly lower chances of diversification compared to those in the Central region. Conversely, gender and household size did not show any statistically significant correlation with income diversification in the multivariate analysis.

5.2.2 Asset ownership

The possession of physical assets (such as land, livestock, and durable goods) did not show a significant relationship with income diversification. Households that owned assets were only marginally more likely to diversify, but this distinction lacked statistical significance.

5.2.3 Access to Credit/Loans

The ability to borrow emerged as one of the most significant predictors of income diversification. Households that engaged in borrowing were ten times more likely to diversify their income than those that did not. Furthermore, joint or consultative financial decision-making greatly enhanced the probability of diversification, highlighting the importance of inclusive household governance in facilitating economic adaptation.

5.3 Conclusion

In summary, income diversification in Uganda is predominantly influenced by vulnerability factors (such as poverty and widowhood), human capital (including youth and education), geographic location, and financial access (encompassing borrowing and inclusive decision-making), rather than by asset endowments or fundamental demographics like gender or household size.

5.4 Recommendations

Based on the findings, the following recommendations are proposed.

i. Reduce barriers to financial inclusion in Western Uganda by expanding access to affordable credit, savings mechanisms, and financial literacy through Savings and Credit Cooperative Organizations (SACCOs), particularly for poor and vulnerable households. Strengthening financial inclusion will enable greater participation in non-farm economic activities. In addition, prioritize investments in infrastructure, market linkages, and business development services within the Western region to address structural constraints and bridge the income diversification gap.

ii. Invest in basic education by promoting the completion of at least primary and vocational education, particularly in rural areas. Enhancing access to foundational and skills-based education equips individuals with the capacity to engage in multiple income generating activities and to better identify and exploit diverse economic opportunities.

iii. Strengthen support for vulnerable groups by enhancing existing livelihood programs tailored to the needs of women, widows, youth, and low-income households. This includes scaling up initiatives such as the Youth Livelihood Programme (YLP) and the Uganda Women Entrepreneurship Programme (UWEP), with particular focus on vulnerable women such as widows, single mothers, women with disabilities, and female headed households who face structural barriers to income generation and often depend on livelihood diversification for survival.

iv. Promote inclusive household decision-making by integrating gender and social inclusion principles into financial literacy and extension programs. Emphasis should be placed on empowering women, youth, and other marginalized groups to actively participate in joint financial planning and resource allocation within households, as this has been shown to enhance income diversification and improve overall household resilience.

5.5 Areas for further research

Based on the results of this study, the following areas are suggested for further research**.**

i. This study utilized cross-sectional data, therefore future investigations should utilize panel data to observe how household diversification strategies develop over time.

ii. Although joint financial decision-making was significantly linked to diversification, the processes through which inclusive governance functions particularly in male- versus female headed households require more in depth qualitative analysis.

iii. The analysis considered asset ownership in a binary manner, future research should investigate the type, value, and liquidity of assets (for instance, productive versus non-productive assets) to gain a clearer understanding of their role in facilitating non-farm livelihoods.

iv. The notably lower diversification in Western Uganda necessitates targeted research into local constraints such as land tenure systems, market infrastructure, ethnic dynamics, or post harvest handling that may hinder livelihood diversification.

v. Considering that age group (ages 18–30) are significantly more inclined to diversify, research should examine the specific sectors they engage in, the support systems they depend on, and the policy measures that could improve their success in income diversification.

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APPENDIX 1: REGRESSION & DIAGONISTICS

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. estat gof, group(10)

Logistic model for income_diversified, goodness-of-fit test

                     F(9,459) =         1.04
                     Prob > F =         0.4049
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