THE ROLE OF INCOME-GENERATING ACTIVITIES IN IMPROVING THE LIVELIHOOD OF PEOPLE LIVING WITH HIV/AIDS IN TANGA REGION

WILFRED KAFUKU

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends to the Open University of Tanzania the research dissertation titled "***The role of income-generating activities in improving health status of people living with HIV in Tanga region"*** in partial fulfilment of the requirements for the award of Master of Business Administration degree of the Open University of Tanzania.

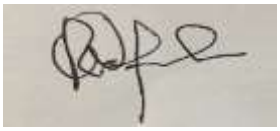
……

Prof. Joseph Magali

(Supervisor)

DECLARATION

I, Wilfred Kafuku, declare that this dissertation is my original work and that it has not been presented and will not be presented to any university for a similar or any other degree award.



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DEDICATION

This work is dedicated to my lovely family, Wife and son, Anna and Robert, and my generous Mother and late Father, Mr. Robert Damson Kafuku, respectively. You are the inspiration of my life.

ABSTRACT

The main objective of this study is to ascertain and analyse the role of income-generating activities in the livelihood improvement of People Living with HIV in the Tanga region, particularly the Kilindi, Korogwe, and Mkinga districts. Specifically, the study assessed the role of volunteering income and income from agriculture, livestock, small businesses, wage employment, handicrafts, savings, and credits on the livelihood improvement of PLHIVs. Simple random sampling selected 419 respondents for the study. The structured questionnaire and the survey were used to collect data. The data were entered into the Statistical Package for Social Scientists (SPSS). Both descriptive and logistic regression analyses were used to process the data. The study revealed the relatively high contribution of income from agriculture and small business activities to the livelihood improvement of PLHIVs. However, the findings revealed the little influence of volunteering income, livestock, wage employment, handcraft, savings, and credit income on the livelihood improvement of PLHIVs. The study recommends strategies that should be embarked on to ensure that income from volunteering, livestock keeping, agriculture, small business activities, savings and credit groups, wage employment, and handicrafts improve the livelihood of people living with HIV in the Tanga Region. Moreover, there should be an established policy to guide the assistance of PLHIVs in economic activities. The findings show that the livelihood improvement of PLHIVs in the Tanga region is not sustainable because no policy guides the establishment and sustainability of economic activities on PLHIVs.

***Keywords**:* Income-generating Activities, Livelihood Improvement, People Living With HIV/AIDS, Tanga Region

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Deficiency Syndrome
ART	Anti-Retroviral Therapy
CTC	Care and Treatment Clinic
FAO	Food and Agricultural Organization
FGD	Focus Group Discussions
HIV	Human Immunodeficiency Virus
IGA	Income-generating Activities
ILO	International Labour Organization
OIs	Opportunistic Infections
PLHIV	People Living with HIV
PODI	Point of Distribution
NACP	National AIDS Control Program
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Overview

This is an introductory chapter. The chapter comprises the background of the study, the problem statement, the objectives of the study, the study's scope, the research questions, the significance of the study, and the study's organization.

1.2 Background of the Study

The number of people living with HIV (PLHIVs) is estimated to be 38.4 million worldwide. About 25.6 million of these individuals live in Africa, 75% of whom have already started anti-retroviral therapy (ART) (Girma et al., 2023). Due to accessibility issues, poor adherence to ART hastens the deterioration of PLHIVs' health status, which causes increased morbidity and mortality. The World Health Organization (WHO) developed measures to lower the death rate for people living with HIV from 680,000 to 240,000 by 2030 by enhancing their health and quality of life (Abrahams, 2022).

USAID (2023) reported that 4.5% of the Tanzanians were affected by HIV. The infection rate is lower (0.5%) in Zanzibar and higher (11.4%) in Njombe. The report further indicated that girls and women were more affected than males. In July 2023, the number of people living with HIV/AIDS in the Tanga region was 61,924, while the total number of PLHIVs who attended clinic monthly was 1,992). Tanga region had extensive 156 Care and Treatment Clinic (CTC) services across the districts (URT, 2023).

Low-income PLHIV cannot get any treatment, including the free ART provided by local medical facilities (Pillai et al., 2019). PLHIVs require funding to cover medical bills, children's school fees, and family members' food (Guets, 2022). Initiating income-generating activities (IGAs) and livelihood assistance programs was one of the interventions provided by the International Labour Organization (ILO) to improve the health and socio-economic status of PLHIVs (International Labour Organization, 2010). IGAs guarantee PLHIVs access to opportunities for self-employment, company development, or vocational training. PLHIVs frequently experience social and economic challenges (Suleiman & Ayuwat, 2021). According to Ghiasvand et al. (2020), PLHIVs with better economic well-being maintain their health.

Income-generating activities (IGAs) refer to any economic endeavours or actions undertaken by individuals, households, or communities to generate income or earn money. These diverse activities can encompass various sectors such as agriculture, small-scale businesses, crafts, services, and other ventures that generate revenue and financial resources. (Kennedy et al., 2014).

Income-generating activities play a significant role in the fight against HIV/AIDS in Sub-Saharan Africa. IGA initiatives help prevent, treat, and support PLHIVs. IGAs empower PLHIVs, especially women and young people, by leveraging their economic opportunities. Hence, IGAs lessen PLHIVs propensity to engage in dangerous behaviours like transactional sex (Hajdu, 2011). According to Pandit et al. (2010), micro-irrigation and farming improved the health and standard of living for

PLHIVs in Kenya. Caldas et al. (2010) recommended further research to determine the impact of microfinance (funds, loans, savings) on enhancing the quality of life and health of PLHIVs.

The selected kinds of income-generating activities are those with the potential to improve the livelihood of people living with HIV in the Tanga region. Volunteering income is chosen because some volunteers use it to meet living expenses. Livestock keeping and agriculture are basic economic activities in rural and some areas in Tanzania (Woodley & Jennings, 2016). Furthermore, small business activities offer income-generation opportunities for the majority of the population in Tanzania. Many Tanzanians depend on savings and credit groups for savings and capital provision for PLHIVs. Wage employment accommodates the specific needs of PLHIVs, offers stable incomes, and reduces stigma. Handicrafts offer income opportunities and serve as a platform for fostering income-generating activities (Seif. 2015).

Several studies did not comprehensively cover how PLHVs benefit from income development activities. For instance, Hajdu et al. (2011) did not focus on the role of agricultural activities, and Toperesu (2010) did not focus on volunteers' income. The review of literature shows that none of the studies which assessed the influence of income on HIV/AIDS such as Ghiasvand et al. (2020), Barany et al. (2005), Mutenje et al. (2008), Suleiman and Ayuwat (2021), Caldas et al. (2010), Cohen et al. (2015) and Guests et al. (2022) focused on the diverse role of income-generating activities for PLHIVs. This shows that more studies need to be done to assess the role of

diverse income-generating activities such as project volunteering, livestock keeping, agriculture, small business activities, and funds from savings and credit groups in improving the health of PLHIVs.

The major gap in this study is the absence of comprehensive knowledge between income-generating activities and the people living with HIV/AIDS in the Tanga region of Tanzania. The study reveals the current information on the role of integrated income generation activities in the improvement of the livelihood of people living with HIV or AIDS. This study assists policymakers by providing detailed information on the income generation activities of PLHIVs in the Tanga region. Therefore, the study unveils detailed information on the influence of integrated income generation activities on the livelihood improvement of PLHIVs in the Tanga region compared to the previous studies.

The sustainable livelihood approach proposed by Chambers and Conway (1992) was applied to offer a comprehensive livelihood analysis for PLHIVs in the Tanga region. In this setting, income from volunteering, livestock keeping, agriculture, small business activities, savings and credit groups, wage employment, and handicrafts were hypothesized to promote the sustainable livelihood of people living with HIV in the Tanga Region.

Mixtures of income-generating activities sustain the livelihood of people living with HIV in the Tanga region because it allows PLHIVs to switch from one income to another. Nurturing economic independence, providing stable financial support, and

promoting social integration hastens the sustainable livelihood of PLHIVs. Activities of volunteering, livestock keeping, agriculture, small business ventures, savings and credit groups, wage employment, and handicraft production provide a diversity of sources of income that encourage the sustainable livelihood of PLHIVs.

1.3 Statement of the Problem

Most PLHIVs experience higher poverty levels (Bateganya et al., 2012). Moreover, due to stigma, most PLHIVs have a deficient quality of life because they cannot work or participate in productive activities in their communities. (Ramadhani et al., 2007). The influence of income-generating activities (IGAs) in enhancing the standard of living and health among PLHIVs has not been thoroughly studied (Magohe, 2016).

Scanty studies done on the role of IGAs for PLHIVs call for more studies to assess the role of other income-generating activities such as project volunteering, livestock keeping, agriculture, small business activities, and funds from savings and credit groups on improving the health of PLHIVs. Thus, this study aims to assess the role of IGA in improving the livelihood of PLHIVs in the Tanga region in Tanzania, focusing on diverse income-generating activities.

This study motivated the researcher because of the economic challenges faced by PLHIVs in meeting their economic needs, particularly in the Tanga region of Tanzania. Focusing on income-generating activities such as volunteering, livestock keeping, agriculture, small business endeavours, savings and credit groups, wage

employment, and handicrafts offers comprehensive insights into how these activities create sustainable economic empowerment for a susceptible population. Moreover, the study gives insights into the development or amendments of the policies, which uplifts the economic well-being of PLHIVs in the Tanga region. Sustainable economic activities foster economic freedom and greater financial independence to improve PLHIVs' quality of life.

This study is an extension of Nsheha (2021), who related income-generating activities and the status of PLHIV ART adherence and retention in Tanzania, particularly in the Magu district. The findings indicated that there was a significant contribution to the livelihood improvement and health status of PLHIV and ART adherence and retention. However, a detailed analysis of how each income-generating activity contributed to the livelihood improvement of the clients was not given.

1.4 Research Objectives

1.4.1 General Objective

The main objective of this study is to assess the role of Income-generating Activities in improving the livelihood of people living with HIV in the Tanga Region.

1.4.2 Specific Objectives

This section describes the objectives underlining this study. The objectives give insights into the roles of diverse income-generating activities in fostering the livelihood of people living with HIV/AIDS in the Tanga Region.

i. To assess the role of income obtained from volunteering activities in improving the livelihood of people living with HIV in the Tanga Region.
ii. To assess the role of income obtained from livestock keeping on improving the livelihood of people living with HIV in the Tanga Region.
iii. To assess the role of income obtained from agriculture activities in improving the livelihood of people living with HIV in the Tanga Region.
iv. To assess the role of income obtained from small business activities in improving the livelihood of people living with HIV in the Tanga Region.
v. To assess the role of income obtained from savings and credit groups in improving the livelihood of people living with HIV in the Tanga Region.
vi. To assess the role of income obtained from wage employment in improving the livelihood of People Living with HIV in the Tanga Region.
vii. To assess the role of income obtained from handicraft activities in improving the livelihood of People Living with HIV in the Tanga Region.

1.5 Scope of the Study

The study concentrated on assessing the influence of income-generating activities on people living with HIV/AIDS in the Tanga region. The study particularly targeted (Kilindi district council, Korogwe town council, and Mkinga district council. The combination of the rural and urban councils aimed to capture the status of income-generating activities PLHIVs both from rural and urban areas. The Tanga region has been selected for the study because, according to URT (2023), the number of PLHIVs is relatively high. Moreover, the hospitality culture of residents living in the region and the interaction between people living in Tanzania and foreigners makes

the region vulnerable to HIV infection. Bordering with Kenya also increases the risk of HIV infection. Hence, the study analysed the influence of income generation activities on the livelihood improvement of PLHIVs.

The scope of this study is limited to assessing the role of income-generating activities to the People Living with HIV in the Tanga Region. People living with HIV targeted were those already enrolled in Clinics and Care Centres and are in regular treatment, either registered in groups or identified through Home-Based Care services. One of the key reasons for this study on Tanga is because Tanga had a lot of trans-migration and movement and a relative number of PLHIVs 73,000 with extensive 156 Care and Treatment Clinic (CTC) services across the districts.

1.6 Significance of the Study

People Living with HIV (PLHIVs) have been facing various and cross-cutting challenges in various aspects of life. These unique challenges, like low socio-economic status, stigma, and discrimination, have impacted an increase in the rate of morbidity and mortality among them. There are notable efforts and progress towards service delivery, like access to ART and increased funding for HIV services delivery, though still there are observed low employment opportunities, unstable social relationships, life insecurities, and poverty.

This study is intended to address and notify the stakeholders to support and take a comprehensive approach to PLHIVs IGAs either by providing funds or through investing so as to facilitate PLHIVs to have a good source of income that will

support then reaching their needs, including nutritious food, transport fees to the health facilities, paying rent, paying for schools, medical bills and other socio-economic needs. This information can help policymakers to design and implement more effective livelihood improvement programs for PLHIVs.

1.7 Organization of the study

This study is organized into five chapters. Chapter one covers the introduction and background of the study, statement of the problem, research objectives, research questions, scope of the study, significance, structure, and limitations of the study. Chapter two describes the literature review by various authors. Areas under coverage are the definition of key concepts, theoretical and empirical literature review, the conceptual framework, and research gaps. Chapter three describes various research methodologies to be used in this study. Such methodology includes the research design, sampling design, means of data collection, validity and reliability of data to be collected, a method to be used for analysis, variables, and measurements, and consideration of research ethical issues.

Chapter four gives detailed findings and discussion, pointing out all seven specific objectives and focusing on the concerns and information obtained while articulating the study. Chapter five presents the summary of findings, conclusion, recommendations, the contribution of the study to theories, particularly the Sustainable Livelihood Approach (SLA), and recommendations for future research.

1.8 Limitations of the study

The major limitation was inadequate funds, which limited the coverage. The social science research techniques mitigated other limitations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This section discusses and reviews the previous theoretical and empirical studies that are relevant to the study. It further explores the research gap(s) and finally presents the conceptual framework of the study.

2.2 Definition of terms

This section defines the key terms used in this study.

2.2.1 People Living with HIV

According to Girma et al. (2023), People Living with HIV, abbreviated as PLHIVs, are people who are affected with HIV or people with AIDS. Sometimes, the terms HIV and AIDS are used interchangeably.

2.2.2 Income-generating Activities

Income-generating activities refer to any form (formal or informal) of economic activity that is undertaken for the primary purpose of generating income or revenue. These activities can take many forms, including self-employment, entrepreneurship, wage employment, livestock keeping, and other forms of work. Income-generating activities are the key to poverty reduction (Kennedy et al., 2014).

2.2.3 Livelihood improvement

This is the situation when the livelihood of the PLHIVs changes from the worst condition to good condition. Incrementing assets may realize livelihood improvement, the number of meals, income, business capital, and improved education and health access (Lorato et al., 2023).

2.3 Theoretical Literature Review: The Sustainable Livelihood Approach (SLA)

This study used the Sustainable Livelihood Approach SLA), which was initiated in the 1990s. SLA emphasizes that any approach to the livelihood that cannot be sustained for the future generation is not sustainable (Chambers & Conway, 1992). In order to sustain the livelihood, there should be strategies to promote sustainability (Morse et al., 2009). For the sake of this study, in order to sustain PLHIVs, the strategies for initiating income-generating activities should be stressed. The strategies include PLHIVs seeking income from volunteering activities and wage employment, keeping livestock, and engaging in agricultural and business activities. Other strategies include borrowing business capital from savings and credit groups and engaging in handcrafts activities.

Various studies have used SLA in different fields, such as Magali (2021), in assessing the role of village community banks in industrialization; Scoones (1998) regarded SLA as a resource through which sustainable livelihood can be promoted. SLA was regarded as a resource to promote cultural activities (Petersen & Pedersen, 2010). It is also applied in monoculture rubber production (Wang et al., 2023). According to Clay (2017) and Zhao et al. (2019), climate adaptability and

management of disasters can be explained by SLA. However, there is a shortage of studies that link the SLA, income-generating activities, and PLHIVs. Therefore, this study shows how PLHIVs' livelihood was sustained through income-generating activities. Particularly, the study assessed the wise use of volunteer income and income earned from volunteering activities. Moreover, the study examined how income from wage employment, livestock keeping, agriculture, small business, handcraft activities, and income borrowed from savings and credit groups improved the livelihood of PLHIVs.

2.3.1 Empirical Analysis of Relevant Studies

Guimarães et al. (2018), covering worldwide studies using the systematic literature review, revealed that the economic status of IGAs PLHIVs was improved. The majority of the reviewed studies used qualitative analysis, and they did not assess quantitatively how each economic activity improved the livelihood of PLHIVs. Moreover, none of the studies examined the role of income-generating activities in improving the livelihood of PLHIVs.

Eberl and Krug's (2021) regression-based study demonstrated that volunteering at the moment had a favourable impact on salaries in German. The length of time spent volunteering has little effect on salary. Volunteering almost instantly raised pay, and this persisted over time. The study demonstrated that job transition was not necessarily a means to achieve the economic benefits of volunteering. However, the study did not specify the kind of work for volunteering.

By using the regression analysis, Boomer et al. (2022) measured the phases of employment decision-Making and how it necessitates vocational services training. The training acted as a social determinant for PLHIVs in New York, USA. The findings revealed that about 33% of the PLHIVs from United States service organizations in New York were hourly wage employees. However, the study concentrated on the measurement of how PLHIVs were involved with various wage-related activities and not how the income-generating activities improved the livelihood of PLHIVs. Table 2.1 presents the summary of the empirical literature review.

Clarke et al. (2023), using descriptive analysis, examined how the food wellness programme stimulated the living standard of PLHIVs. The study assessed the affordability of food by using data from supermarket websites. The findings from the descriptive analysis proved that IGAs recovered the costs of nutrition for PLHIVs in Scotia.

UNDP (2012) review the socio-economic status of women living with HIV/AIDS in Asia. The study examined the experiences of ten empowerment initiatives for women living with HIV in China, Cambodia, India, Thailand, Vietnam, and Myanmar, and the study concentrated on the role of vocational training, microfinance, and social enterprises livelihoods. The findings disclosed that all of the reviewed approaches promoted the financial well-being and empowerment of recipients, particularly women. The findings indicated that women improved self-esteem and self-confidence. Moreover, the women realized the significant improvements in their

living, particularly improved social acceptance and access to health and other social services. The findings further indicated that microfinance programmes enhanced the availability of financial services, reduced stigma, and improved the livelihood of women who lived with HIV/AIDS.

Hadju et al. (2011) assessed the effectiveness of PLHIV's young income-generating activities for Malawi and Lesotho by using qualitative analysis. The study revealed that HIV/AIDS for young people can be reduced if adequate vocational training in business and capital management is conducted. The findings exposed that young people actively established income-generating activities and sustained them. However, the study covered only young people, and income from agriculture, livestock keeping, savings and credits groups, and volunteering income were not addressed.

Kennedy et al. (2013) systematically reviewed the role of IGAs in the prevention of HIV/AIDS in Sub-Saharan Africa. The findings indicated that vocational skills and microfinance services were effective tools for reducing HIV prevention. However, more coverage was on microfinance services rather than income generation activities.

Mutenje et al. (2007) investigated how Zimbabwean PLHIV established the IGAs to improve their livelihood by using descriptive analysis. The findings unveiled that only microbusiness activity was covered. Moreover, the study concentrated only on urban areas.

Similarly, Mutenje et al. (2008), using regression analysis and data from the Bindura and Muzarabani districts of Zimbabwe, revealed that small livestock and poultry positively and significantly smoothed fluctuations of income caused by HIV/AIDS. The findings further indicated that cattle sales were composed of 71% compensation. Furthermore, Toperesu (2010) analysed how IGA promoted the livelihood of PLHIV in Zimbabwe using qualitative analysis. The findings indicated that IGA impacted more volunteers' livelihoods. However, no empirical analysis was given to other variables such as volunteer income, income from business, handcraft, savings, and credit groups.

Suleiman and Ayuwat (2021) analysed the HIV/AIDS socio-economic effects for PLHIVs in Northern Nigeria. The findings revealed HIV/AIDS threatened the household's earnings and livelihoods. Hence, planned IGAs might minimize the threats of the pandemic. However, detailed information on the types of IGAs was not revealed.

By using descriptive and correlation analysis, Ssewamala et al. (2013) revealed that small business undertakings, farming, and vocational training were operative in IGAs for improving the economic well-being of PLHIV in Uganda. Similarly, Muzeyi et al. (2023), by using regression and qualitative analysis, contended that training and start-up capital provision improves the livelihood of young people living with HIV/AIDS in Uganda. However, the study basically analyzed the uptake of community anti-retroviral group delivery models for persons living with HIV and how the income-generating activities improved the livelihood of PLHIVs.

Mugo et al. (2021), by using the descriptive analysis, indicated that food security and income were among the institutional factors that reduced the stigma of PLHIVs in Kenya. The assessment confirmed the importance of financial resource accessibility in embarking on economic opportunities. However, the study did not assess how the diverse economic activities improved the livelihood of PLHIVs. By using descriptive analysis, Kako et al. (2021) exposed how PLHIV women's peers survived in Kenya. The analysis disclosed that women sustained through the establishment of income-generation activities, notwithstanding no deep analysis of how the IGAs improved the livelihood of women.

Cohen et al. (2015) analysed the influence of the Shamba Maisha Plus programme on improving food security and combating HIV/AIDS in Kenya. The cluster-randomized controlled trial design was used, and the analysis was mainly based on descriptive and regression. The findings showed that Shamba Maisha facilitated agricultural and financial management training. Also, the use of water pump irrigation improved labour savings. However, the study disclosed the challenges of loan repayment, unreliable agricultural weather patterns, and collaboration difficulties with microfinance institutions observed. Nevertheless, the study did not assess the role of agricultural activities on the livelihood improvement of PLHIVs.

Using descriptive analysis, Woodley and Jennings (2016) revealed that group platforms promoted Women in Kenya to engage in income-generation activities. Moreover, the findings showed that the groups promoted capital accumulation, which was used as a loan. The loans were used to finance economic activities. The

income earned from economic activities improved the meal intake, production activities, health status, and education of the group members' children. However, the types of economic activities were not clearly specified, and the influence of volunteering income and ages were not assessed.

Using the thematic and contents analysis, Kitilya et al. (2023) approved that participating in income-generating activities improved people's physical fitness. The physical activities improved the fitness of people living with HIV/aids in Tanzania. However, the study did not analyse how income-generating activities improved the livelihood of PLHIVs.

Chiduo and Bostick (2017) qualitatively assessed how to improve the income of people living with HIV/AIDS in Tanzania through the income-generating activities project. The findings indicated that the project community profited greatly from the Kibara Lifelines project beneficiaries. The findings revealed that the majority of the project participants increased their assets and savings. Moreover, crop cultivation, production, and consumption increased. The findings further showed that savings and credit group lending contributed enormously to the livelihood of PLHIVs. Nonetheless, other variables of livelihood improvement, such as the role of livestock keeping, small business, handcraft, and volunteer income, were not considered.

Nsheha (2021) used descriptive and regression analysis related to income-generating activities and the status of PLHIV ART adherence and retention in Tanzania, particularly in the Magu district. The findings indicated that there was a significant

contribution to the livelihood improvement and health status of PLHIV and ART adherence and retention. However, a detailed analysis of how each income-generating activity contributed to the clients' livelihood improvement was not given.

Using descriptive analysis, Seif (2015) analysed the contribution of women involved in handicrafts to household living standards in the Wete district, Pemba, in Tanzania. The findings indicated that the contribution of the handcraft activities to the livelihood improvement of the women in Wete, Pemba, was small. However, the study did not assess the influence of handcraft on the livelihood improvement of PLHIVs.

Table 2.1: Empirical Literature Review Summary

S/N	Author, year, and country	Title of the study	Methods used for data analysis	Findings	Gap(s)
1	Hajdu et al. (2011)	IGAs as components of sustainable rural livelihoods for young SA AIDS and other constraints	Qualitative	Business training and start-up capital have the potential to improve poor and AIDS-affected young people.	There was no detailed and clear explanation of how agriculture and livelihood have improved the income-generation activities of the young. PLHIV volunteering income
2	Toperesu (2010) in Zimbabwe	Effects of the IGAs on Volunteer Care Givers' service delivery in Zimbabwe	Qualitative Analysis	- IGA had more impact on the livelihood of the volunteers than CHBC service delivery.	There was no explanation of the type of continual entrepreneurship of the members. -
3	UNDP (2012) in Asia	A review of socio-economic empowerment initiatives for women living with HIV in Asia	Qualitative Analysis	microfinance and microenterprises improved livelihoods for PLHIV	There is no clear information on how capital facilitation improved IGAs for women.
4	Kennedy et al. (2013) in Sub-Saharan Africa	A systematic review of income generation interventions, including microfinance and vocational skills training, for HIV prevention	Cross-Sectional, Descriptive Study	- Microfinance and vocational skills interventions are effective at changing HIV-related sexual risk behaviours.	- The study explains much about the income-generating activities to risk behaviour rather than details the improvement of lives for PLHIV economically. -

Source: Compiled from empirical literature review

2.4. Research Hypotheses

Based on the empirical literature review, this study tested the following hypotheses:

i. H1: income obtained from volunteering activities improves the livelihood of people living with HIV in the Tanga Region
ii. H2: income obtained from livestock keeping improves the livelihood of people living with HIV in the Tanga Region
iii. H3: Income obtained from agricultural activities improves the livelihood of people living with HIV in the Tanga Region
iv. H4: income obtained from small business activities improves the livelihood status of people living with HIV in the Tanga Region
v. H5: income obtained from savings and credit groups improves the livelihood status of people living with HIV in the Tanga Region
vi. H6: income from wage employment improves the livelihood of people living with HIV in the Tanga Region.
vii. H7: income obtained from handicrafts improves the livelihood of people living with HIV in the Tanga Region.

2.5 Research gap

The empirical literature review indicates that there is no comprehensive study that assessed the diverse influence of income-generating activities on the livelihood improvement of people living with HIV/AIDS. Most of the studies, such as Mutenje et al. (2007) and Hadju et al. (2011), focus only on one variable. Moreover, to the best of the authors' knowledge, the studies have yet to apply the seven variables of this study altogether. Furthermore, no study combined the livelihood improvement of

PLHIV, the income-generating activities, and SLA using the seven variables used in this study. The studies by Kako et al. (2021), UNDP (2012), Aspires (2018), Hajdu et al. (2011, and Hajdu et al. (2011) were qualitative and hence was impossible to generalize the findings because the studies have not tested the hypotheses instead they generalized the facts. The findings also indicated that there were scanty studies conducted in Tanzania. Moreover, there is a need for more contemporary studies to assess the role of income-generating activities on the livelihood improvement of PLHIVs.

2.6 Conceptual framework of the study

Figure 2.1 presents the conceptual framework of the study. The figure displays that the income-generating activities consist of independent variables, while the improvement of livelihood for PLHIVs consists of dependent variables. A brief description of the variables is presented below.

Income from Volunteering Activities

The primary goal of volunteering is to support people living with HIV/AIDS by building their social capital and giving them a sense of community. Higher levels of volunteering result in better mental health, less social isolation, and higher levels of self-esteem. Primarily, volunteering improves the quality of life for PLHIVs. Volunteering income supplements an individual's income, allowing them to invest in health-related expenses and meet their necessities. This can ultimately improve the individual's quality of life for the volunteers.

Livestock Keeping and Agriculture Activities

Engaging in livestock keeping and agriculture activities is not only a source of income but also food for consumption. Therefore, participation in agriculture and livestock activities enhances the nutritional status of PLHIVs. The two activities foster a sense of empowerment and self-reliance for PLHIVs. Agriculture and livestock keeping is very common for the majority of PLHIVs because many Tanzanians depend on agriculture production and livestock keeping for survival.

Small Business Activities

For people living with HIV/AIDS, small business activities greatly enhance financial resilience and income diversification. Profitable small businesses generate jobs for residents, supporting economic expansion as well as a feeling of empowerment and communal development. Taking part in small business activities also encourages creativity and entrepreneurship, which creates new markets and the economic welfare of PLHIVs and hence improves livelihood.

Savings and Credit Groups

Participation in savings and credit groups facilitates access to financial resources, enabling PLHIVs to make strategic investments and, hence, secure financial stability for the future. The savings and credits groups provide a safety net during emergencies and reduce the financial burden associated with unexpected health-related expenses and other livelihood challenges. By fostering a culture of saving and financial responsibility, savings and credit groups promote financial security and

empowerment, enhancing the well-being and livelihood improvement of people living with HIV/AIDS.

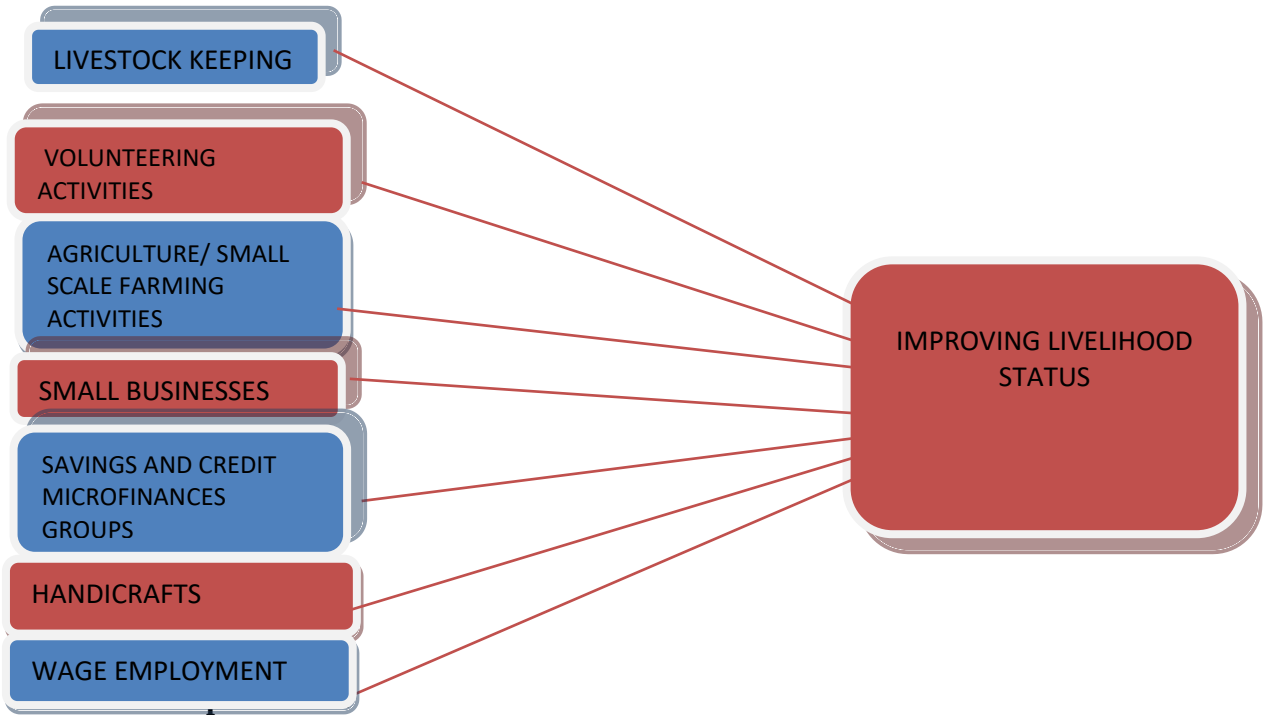
Wage Employment

Gaining wage work contributes to financial security and better access to necessities like housing, healthcare, and education. Therefore, wage employment offers a steady and reliable source of income. Opportunities for employment encourage social inclusion and lessen the stigma and discrimination of PLHIVs. Wage employment encourages consistency and stability. Moreover, wage employment allows a sense of control and predictability over their financial circumstances, which can improve their quality of life and contribute to a better livelihood for PLHIVs.

Handicrafts Activities

Handcraft activities aid in the preservation of cultural history and customs. Handicraft-related income supplements PLHIVs, allowing them to invest in healthcare, education, and other necessities, ultimately improving one's standard of living and financial well-being. Handicraft activities foster creativity and skill development and improve the psychosocial well-being and quality of PLHIVs. Figure 2.1 indicates that variables of the income-generating activities, such as volunteering income, wage income, income from agriculture, livestock, small businesses, handicrafts and savings, and credits, can improve the livelihood of the PLHIVs.

Figure 2.1: Conceptual framework of the study



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This chapter discusses the study strategy and research design employed. It similarly describes the population and its sampling techniques. Data collection and data analysis techniques are also covered in this chapter. Furthermore, the chapter presents the variables and measurement procedures, data validity and reliability, and consideration of research ethical issues.

3.2 Research Philosophy

Research philosophy comprises the set of beliefs or principles that guide conducting a particular research (Saunders, 2019). This study adopted positivist research because it applied quantitative methodological choice. Furthermore, the sample size was relatively large, and through regression analysis, the study tested the hypotheses formulated based on variables of specific objectives.

Using positivism in research provides a strong justification since it emphasizes objectivity, empirical observation, and the use of scientific procedures, which increase the validity y of results. Positivism prioritizes quantifiable data and verifiable proof, which helps researchers stay systematic and ensures the legitimacy and rigour of the study findings. Following positivist principles also makes it easier to develop generalizable rules and theories, which promotes a deeper comprehension of phenomena and makes it possible to forecast future events. Additionally, the

positivist research philosophy fosters accuracy and clarity and permits other researchers to repeat the study (Park et al., 2020).

3.3 Research design

Research design explains the plan through which the research is conducted (Saunders et al., 2019). Hence, the study design elucidates how the study was conducted from the beginning to the end. This study used the explanatory design because the study intended to assess the cause-effect relationship between income-generating activities and livelihood improvement for PLHIVs.

3.4 Research Methodological Choices

The study applied the quantitative approach. The quantitative approach promotes replicability and objectivity (Saunders et al., 2019). Quantitative methodological choice also permits the standardized collection of data, reduces biases, and increases data reliability (Smith & Johnson, 2018).

3.5 Research Approach

As recommended by Saunders et al. (2019), the study adopted the deduction approach because it has formulated the hypotheses for testing. Deductive reasoning not only allowed the researcher to test the propositions of the theories but also promoted systematic data collection and analysis. Furthermore, the deductive approach promoted the validity of the reliability of data (Smith & Johnson, 2018).

3.6 The Study Area

Tanga region consists of 11 districts, which are Tanga CC, Muheza DC, Korogwe TC, Korogwe DC, Bumbuli DC, Lushoto DC, Mkinga DC, Pangani DC, Kilindi DC, Handeni DC and Handeni TC. The region has been selected because it was occupied by diverse people, both from Tanzania and foreigners, who might spread HIV/AIDS. Moreover, the Tanga region bordered Kenya country, making it susceptible to HIV/AIDS transmission. The overwhelming hospitality culture of the community living in the Tanga region might accelerate the transmission of HIV/AIDS. The research was based in the districts of Korogwe town, Kilindi, and Mkinga.

3.7 Population

A target population is any inference from a sample that refers only to the defined population from which the sample has been properly selected (Smith & Johnson, 2018). The targeted population in this research was PLHIVs. In July 2023, the number of people living with HIV/AIDS in the Tanga region was 61,924, while the total number of PLHIVs who attended clinic monthly was 1,992 (URT, 2023).

3.8 Sampling design

The study used multi-stage followed by simple random sampling. The multi-stage was used because the PLHIVs were selected within three districts. Simple random sampling was used because it guaranteed equal chance participation of PLHIVs. Random sampling ensures that each individual has an equal chance of being included in the study (Johnson & Smith, 2018). Random sampling reduces bias and ensures objectivity in the selection process.

The districts were selected purposely by considering the rural and urban districts:

1. The districts were classified into rural and urban clusters.
2. The districts under study were selected purposely to balance the rural and urban districts.
3. The researcher selected the districts with activities specified in the specific objectives.

In addition, the sampled PLHIVs were selected among the population of PLHIVs who attended clinics. Through random sampling technique, PLHIVs in the districts were listed on a piece of paper, then the pieces of paper were folded and mixed up, and the researcher chose the district and respondents one by one until the total sample was obtained.

3.9 Sample size

The number of participants or observations included in a research study is known as the sample size (Saunders et al., 2019). This study used 10% of the population, as recommended by Bullen (2014), who stated that if the objects do not exceed 1000, individuals worth 10% of the population may be picked for analysis. Only three councils (Kilindi et al. Council) were randomly picked for the survey. These districts have been selected based on three reasons:

1. The researcher's available resources made him consider these districts.
2. The districts had diverse demographic characteristics, making them representative of the broader population of PLHIVs in the Tanga region.

3. The districts have various income-generating activities that are relevant to the livelihood improvement of PLHIVs.

The total sample size (10%) of the population for PLHIVs who attended clinic services in Kilindi district council, Korogwe town council, and Mkinga district council were 119+190+99 =408 PLHIVs. Table 3.1 portrays the distribution of PLHIVs in the Tanga region, and three councils that were randomly selected are bolded.

Table 3.1: Population and sample size

Councils	Total Number of PLHIVs	Average monthly attendee	10% of the population
Bumbuli DC	1,953	633	63
Handeni DC	4,586	1,582	158
Handeni TC	2,849	1,027	103
Kilindi DC	**2,782**	**1,191**	**119**
Korogwe DC	4,614	1,636	164
Korogwe TC	**5,784**	**1,902**	**190**
Lushoto DC	4,716	1,635	164
Mkinga DC	**3,069**	**994**	**99**
Muheza DC	11,609	3,207	321
Pangani DC	3,390	1,009	101
Tanga CC	16,572	5,102	510
Grand Total	**61,924**	**19,918**	**1,992**

Source: URT (2023)

3.10 Sources of data and data collection tool

Only primary data were collected in this study. Primary data were collected using structured questionnaires. The questionnaire consisted of demographic variables about sex, age, level of education, and marital status. Moreover, 5 Likert variables of 1 strongly disagree, 2 disagree, three neutral, four agree, and five strongly agree were used for categorical variables. The ratio variables were volunteering income, income from agriculture, livestock, small business, wage employment, handcraft and savings, and credits and livelihood improvement of PLHIVs.

3.11 Data Analysis

According to Chen et al. (2022), the analysis of data implies a process of screening, editing, coding, and splitting of data. Prior to data entry, the collected data were screened to handle the outlier and missing values and correct the errors. Then, the data were coded and entered into the IBM Statistical Programme for Social Sciences (SPSS) to proceed with descriptive and logistic regression analysis. As adopted from Magali (2014), the logistic regression equation was written as follows:

Where the Y is a dependent variable, intercept, and is the Beta coefficient of the variable and the error term. B are the coefficients of n = 1-7. The response of variables was categorized into five Likert scales: 1 strongly disagree, two disagree, three neutral, four agree, and five strongly agree. In order to run the regression analysis, both independent and dependent variables were recoded into 2-categories: 1 if there was an impact and 0 where there were no impacts. The variables in the equation are described below:

X1- income obtained from volunteering activities

X2- income obtained from livestock keeping

X3- income obtained from agricultural activities

X4- income obtained from small business activities

X5- income obtained from savings and credit groups

X6- income obtained from wage employment

X7- of income obtained from handicraft activities

Y-Livelihood improvement -1 Yes; 0 otherwise (No)

3.12 Variables and measurement

Table 3.2 shows the variables, sources, and measurement scale.

Table 3.2: Variables and Measurements

Variable	Source	Type of Scale
Livelihood improvement	Magali (2014).	Dichotomous (Yes =1; No=0)
Project Volunteering income	Eberl and Krug's (2021).	5-Likert scales
Livestock Keeping income	ILRI (2010)	5-Likert scales
Agricultural Activities income	Cohen et al. (2015).	5-Likert scales
Small Business Income	(Kennedy et al., 2014;).	5-Likert scales
Wage Employment	Boomer et al. (2022)	5-Likert scales
Handicrafts income	Seif (2015).	5-Likert scales
Income Obtained from Savings and Credit Groups	(Caldas, A., et al., 2010 ; Kennedy et al., 2014).	5-Likert scales

3.13 Data validity

According to Roberts and Williams (2019), the validity of the research tool means measuring what it is intended to measure. The validity of the research instrument was enhanced by its careful construction. This was achieved by carefully following the advice from the experts in the field and a supervisor. Moreover, the use of variables

from the previous studies enhanced the research tool's validity. Piloting the research tool also enhanced its validity.

3.14 Data Reliability

The reliability of the research tool can be confirmed if it yields a similar result at different times (Roberts & Williams, 2019). The reliability of the research tool aims to ensure the consistency of the findings and the precision of the research results. Mostly, the Cronbach Alpha coefficient is used to measure the consistency of the research tool. The consistency of the research tool is confirmed if the value of Cronbach's alpha is 0.7 and above (Mweu & Mung'ara, 2021). Table 3.3 presents the results of the reliability analysis. The findings show that the mean Cronbach alpha was 0.769, showing that the research tool was reliable.

Table 3.3: Reliability analysis results

Type of variables	Number of items	Cronbach alpha
Demographic variables	6	0.723
Income-generating activity variables	7	0.815
Mean	7	0.769

3.15 Research ethical issues consideration

As recommended by Kang and Hwang (2020) and Wallace and Sheldon (2015), All research ethics were considered in this study. First, all respondents sought their consent. Confidentiality and anonymity were upheld. Physical and

psychological disturbance to participants was avoided. Special attention was given to PLHIVs; the researchers protected their dignity and prevented stigmatization. Voluntary engagement or withdrawal from the research was allowed. Data fabrication, falsification, and plagiarism were all avoided.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Overview

The chapter presents and discusses the results based on the specific objectives of the study. The results from demographic variables have also been presented to depict their connection with the specific objectives of the study.

4.2 Response Rate

This study attained a response rate of 100%. This response rate was achieved because the researcher explained the objectives of the study well. The district health office assisted in clarifying to the respondents that the results were to be used only for the intended purpose of the study. Prior to data collection, the researcher proved to the health office that all research ethical issues were to be adhered to.

4.3 The demographic variables

The following sections cover the background variables and how they relate to the objectives of the study. This section covers the analysis of age ranges, sex, education level, marital status, experience, and major activities.

4.3.1 Age ranges

The findings show that the majority of the respondents had age ranges between 18-34 and 35-54 years. The data shows that the majority of respondents who had HIV/AIDS were belonging to the active age category. The data signifies that efforts are needed to reduce HIV/AIDS among the active-age population to enable them to

participate in economic activities to improve their livelihood. The findings are compatible with Hadju et al. (2011), who confirmed that the majority of HIV/AIDS-infected groups of the population are youth and active working groups of the population.

Table 4.1: Age Ranges

Age Ranges	Frequency	Percent
18-34	143	35.0
35-54	191	46.7
54 and above	75	18.3
Total	409	100.0

4.3.2 sex

The finding from Table 4.2 indicates that the majority of the respondents were females. The data shows females were more affected by HIV/AIDS than males. Again, the strategies should be designed to rescue this category of the population from HIV/AIDS infection. The findings concurred with Nuvunga et al. (2023) and Freitas et al. (2023), who revealed that the reproductive category of girls and women comprises the most affected group by HIV/AIDS in sub-Saharan Africa and Brazil, respectively.

Table 4.2: Sex

Sex	Frequency	Percent
Male	153	37.4
Female	256	62.6
Total	409	100.0

4.3.3 Education Level

Findings from Table 4.3 present information about the education level of the respondents. The findings show that the majority were having a primary level of education. The data further shows those with informal education comprised 25.7%. The findings indicate that respondents with low education were numerous. The findings are consistent with Zhang (2023), who revealed that the majority of infected people in China were those with low-level education.

Table 4.3: Education Level

Education level	Frequency	Percent
Informal	105	25.7
Primary	177	43.3
secondary	67	16.4
certificate	31	7.6
Diploma	21	5.1
University	8	2.0
Total	409	100.0

4.3.4 Marital status

Table 4.4 presents the findings on the marital status of PLHIVs. The findings indicate that the majority of the respondents were married. The data also shows that those of single marital status ranked second. The findings imply that single and married people were affected more by HIV/AIDS than other marital statuses. The findings are in tandem with Ogbodo and Ossai (2023), who revealed that the majority of patients who attended the anti-retroviral clinic in Enugu, Nigeria, were married. The findings indicated that in Nigeria, married people were mostly affected by HIV/AIDS compared to other marital statuses.

Table 4.4: Marital Status

Marital status	Frequency	Percent
single	128	31.3
married	167	40.8
divorced or separated	73	17.8
widowed or widower	41	10.0
Total	409	100.0

4.3.5 Experience with income-generating activities while attending CTCs

Findings indicate that the majority of the respondents had experience of 1-5 and 6-10 years with CTC's attendance. Given such experience, the findings justify the rationale for choosing the population for the study on the role of income-generating activities on livelihood improvement for PLHIVs in the Tanga region. The findings prove that respondents have the current information on the role of income-generating activities on livelihood improvement for PLHIVs. Musyani et al. (2023) revealed that the majority (78.8%) of PLHIVs who attended the CTC were attending CTCs for more than five years.

Table 4.5: Experience with income-generating activities while attending CTCs

Experience with income-generating activities while attending CTCs	Frequency	Percent
1-5	220	53.8
6-10	99	24.2
11-15	52	12.7
more than 15	38	9.3
Total	409	100.0

4.3.5 Major income-generating activities

Findings from Table 4.6 present the major income-generating activities for PLHIVs. The findings indicate that the majority of PLHIVs were involved with small business, followed by agriculture and wage employment activities. The findings indicate that the majority of PLHIVs were involved with unstructured economic activities. Hence, the designed strategies for supporting the economic activities would promote livelihood improvement for PLHIVs. Iwuji et al. (2023) revealed that approximately 53% of rural PLHIV households in South Africa depended on agricultural activities for their survival. Moreover, Pascoe (2023) revealed that small business activities played an important role in improving the livelihood of PLHIVs in Zimbabwe.

Table 4.6: Major income-generating activities

Major income-generating activities	Frequency	Percent
project volunteering activities	17	4.2
livestock keeping	18	4.4
agriculture activities	101	24.7
small business activities	176	43.0
wage employment	45	11.0
Handcrafts	14	3.4
Others	28	6.8
I am not involved with any income-generating activity	10	2.4
Total	409	100.0

4.4 The Role of economic activities on livelihood improvement for PLHIVs

The following section presents the findings on the role of economic activities in the livelihood improvement of PLHIVs. The sections provide the findings on the response on the level of five scale agreement regarding whether there was a livelihood improvement or not. Moreover, the findings present the level of responses in the five Likert scale ranges on the role of income from volunteering activities, income from livestock, agriculture**,** small business, wage employment, income from handcraft, and income from savings and credits on livelihood improvement. The findings from Table 4.7 indicate that 72.6% of the respondents agreed that they realized the livelihood improvement in economic activities, while 27.4% denied it. The findings indicate that the majority of the PLHIV realized the livelihood improvement in economic activities. Mokomane et al. (2023) revealed that economic activities have a potential role in improving the livelihood of PLHIVs.

Table 4.7: Livelihood improvement status

Livelihood improvement	Frequency	Percent
Yes	297	72.6
No	112	27.4
Total	409	100.0

4.4.1 income from volunteering activities

The findings from Table 4.8 indicate that 15.4% of the respondents agreed that they received income from volunteering activities. The findings indicate that only a few PLHIVs performed the volunteering activities. Hence, the contribution of

volunteering activities to the income of most PLHIVs was not significant. Coffman et al. (2023) found that despite the health paraprofessionals being paid low wages, it motivated them to save the communities in California. However, the study did not analyse how the wages improved their livelihood. Similarly, the findings are in tandem with Eberl and Krug (2021), who revealed that volunteering activities had a favourable impact on salaries. However, the length of time spent volunteering had little effect on salary. The study demonstrated that job transition is not necessarily a means to achieve the economic benefits of volunteering. However, the kind of volunteering work was not specified.

Table 4.8: Income from volunteering activities

Income from volunteering activities	Frequency	Percent
Strongly disagree	283	69.2
Disagree	22	5.4
Neutral	37	9.0
Agree	40	9.8
Strongly agree	27	6.6
Total	409	100.0

4.4.2 Income from Livestock

The findings from Table 4.9 show that only 17.9% of the respondents agreed that the income from livestock contributed to their livelihood improvement. The findings indicate that only a few PLHIVs engaged in livestock keeping. Hence, the contribution of livestock keeping to the livelihood improvement of PLHIVs was not

significant. The findings contradict Mutenje et al. (2008), who revealed that livestock keeping improved the livelihood of PLHIVs in Zimbabwe.

Table 4.9: Income from Livestock

Income from Livestock	Frequency	Percent
Strongly disagree	269	65.8
Disagree	16	3.9
Neutral	51	12.5
Agree	42	10.3
Strongly agree	31	7.6
Total	409	100.0

4.4.3 income from agriculture

The findings from Table 4.10 show only 33.5% of the respondents agreed that agricultural activities improved their livelihood. The findings indicate that only a few PLHIVs were engaging in agricultural activities. The findings concur with Cohen (2015), who realized the role of agriculture for PLHIVs in Kenya. However, the study assessed how agriculture productivity strategies promoted the livelihood of PLHIVs in Kenya and not the role of agriculture in the livelihood improvement of PLHIVs.

Table 4.10: Income from agriculture

Income from agriculture	Frequency	Percent
Strongly disagree	206	50.4
Disagree	13	3.2
Neutral	53	13.0
Agree	67	16.4
Strongly agree	70	17.1
Total	409	100.0

4.4.4 income from small business

The findings from Table 4.11 indicate that 43% of respondents agreed that income from small businesses improved their livelihood. The findings indicate that most PLHIVs were involved with small business activities than any other activities. The findings are in tandem with Mutenje et al. (2007), who revealed the role of small businesses in the livelihood improvement of PLHIVs in Zimbabwe.

Table 4.11: Income from small business

Income from small business	Frequency	Percent
Strongly disagree	148	36.2
Disagree	20	4.9
Neutral	65	15.9
Agree	94	23.0
Strongly agree	82	20.0
Total	409	100.0

4.4.5 Wage employment

The findings from Table 4.12 indicate that 24.4% of the respondents were involved with wage employment. The findings imply that only a few PLHIVs secured wage employment. Boomer et al. (2022) revealed that about 33% of the PLHIVs from United States service organizations in New York were hourly wage employees. However, the study measured the phases of employment decision-making and the assessment of requiring vocational services and not how the wages improved the livelihood of PLHIVs.

Table 4.12: Wage employment

Wage employment	Frequency	Percent
Strongly disagree	256	62.6
Disagree	20	4.9
Neutral	33	8.1
Agree	59	14.4
Strongly agree	41	10.0
Total	409	100.0

4.4.6 income from handcrafts

Findings from Table 4.13 disclose that only 11% of the respondents were involved with handcraft activities. The findings imply that only a few PLHIVs performed the handcraft activities to improve their livelihood. Seif (2015) revealed that the impact of handcraft activities on the livelihood improvement of the women in Wete, Pemba, was insignificant. However, the study covered all categories of women, and it was not specified for PLHIVs.

Table 4.13: Income from handcraft

Income from handcraft	Frequency	Percent
Strongly disagree	300	73.3
Disagree	26	6.4
Neutral	30	7.3
Agree	27	6.6
Strongly agree	26	6.4
Total	409	100.0

4.4.7 income from savings and credits

The findings from Table 4.14 show that only 19.3% of the respondents agreed that income from the handcrafts improved their livelihood. The findings signify that only a few PLHIVs were involved with savings and credit activities. Chiduo and Bostick (2017) showed that savings and credit group lending contributed enormously to the livelihood of PLHIVs in Tanzania. However, the study was qualitative. Hence, the study recommended a quantitative study to confirm their findings. However, this study disconfirms their findings.

Table 4.14: Income from savings and credits

Income from savings and credits	Frequency	Percent
Strongly disagree	286	69.9
Disagree	19	4.6
Neutral	25	6.1
Agree	30	7.3
Strongly agree	49	12.0
Total	409	100.0

4.5 Results from the Logistic regression model

As suggested by Magali (2014), in order to accept the results from the logistic regression, it is better to check the model strength by using Cox & Snell R Square and Nagelkerke R Square. The findings from Table 4.15 show that the logistic regression model is well-specified. From the model, the values of Cox & Snell R Square and Nagelkerke R Square are 0.739 and 0.861, respectively. Moreover, the Hosmer and Lemeshow tests generated a significance value of 0.620, indicating that the model was well specified, too.

The logistic regression analysis revealed a significant and positive influence of volunteering income on the livelihood improvement of people living with HIV/AIDS (PLHIVs) ($p < 0.05$). The findings indicate that individuals who earned income through volunteering activities experienced a notable enhancement in their livelihood status. Contrary to the initial expectation, the analysis did not find a significant influence of livestock income on the livelihood improvement of PLHIVs ($p > 0.05$). The findings suggest that income generated from livestock keeping did not substantially contribute to the overall livelihood improvement of individuals living with HIV/AIDS.

The analysis demonstrated a significant and positive association between agriculture income and the livelihood improvement of PLHIVs ($p < 0.05$). The findings signify that individuals engaged in agricultural activities experienced notable improvements in their livelihood status, highlighting the importance of agriculture as a viable income-generating activity for this population.

The results indicated a significant and positive influence of small business income on the livelihood improvement of PLHIVs ($p < 0.05$). The findings affirm that engagement in small business activities was found to be a crucial factor contributing to the overall improvement in the livelihoods of individuals living with HIV/AIDS.

The analysis revealed that there was no significant relationship between wage income and the livelihood improvement of PLHIVs ($p < 0.05$). The findings certify that individuals with regular-wage employment did not experience a considerable improvement in their overall livelihood, emphasizing the importance of stable employment opportunities for this population.

The findings indicated a significant and positive impact of handcraft income on the livelihood improvement of PLHIVs ($p < 0.05$). The results demonstrate that engagement in handicraft activities was associated with notable enhancements in the economic and social well-being of individuals living with HIV/AIDS. Finally, the analysis did not find a significant influence of savings and credit groups' income on the livelihood improvement of PLHIVs ($p > 0.05$). The results suggest that the income generated from participation in savings and credit groups was not a significant contributor to the livelihood improvement of individuals living with HIV/AIDS.

Ssewamala et al. (2013), using descriptive and correlational analysis, revealed that small business undertakings, farming, and vocational training were operative in IGAs for improving the economic well-being of PLHIV in Uganda. Moreover, Seif (2015)

revealed that the impact of handcraft activities on the livelihood improvement of the women in Wete, Pemba, was insignificant. Chiduo and Bostick (2017) showed that savings and credit group lending contributed enormously to the livelihood of PLHIVs in Tanzania.

Table 4:15: Findings from Logistic Regression analysis

	Model Summary			**Hosmer and Lemeshow Test**		
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square	df	Sig.
1	439.017[a]	.739	.861.	28.435	7	.620

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

		B	S.E.	Wald	df	Sig.
Step 1[a]	VIOLNCOMKE	.013	.368	.001	1	.971
	LIVE INCOME	.380	.362	1.100	1	.294
	AGRIICICOME	.085	.267	.101	1	.001
	SMALLBUS INCOME	1.195	.255	21.870	1	.000
	WAGE INCOME	.580	.309	3.527	1	.070
	HANDCRAFINCOME	1.635	.510	10.274	1	.006
	SAVCREINCOME	1.098	.417	6.942	1	.080
	Constant	1.638	.270	36.944	1	.000

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Overview

The chapter covers the summary of findings based on the specific objectives, conclusion, recommendations, the contribution of the study to theories or SLA model, and direction for future studies.

5.2 Summary of Findings

The summary of findings is organized based on the results from the specific objectives. More details on the summary of findings are presented below.

5.2.1 The role of income obtained from volunteering activities in improving the livelihood of people living with HIV in the Tanga region

The findings indicated that only 15.4% of the PLHIVs agreed that income from volunteering activities improved their livelihood. The findings imply that only a few PLHIVs benefited from this type of income source. The findings from the logistic regression analysis also indicated that the income from volunteering activities did not significantly contribute to the livelihood improvement of the PLHIVs.

5.2.2 The role of income obtained from livestock keeping on improving the livelihood of people living with HIV in the Tanga Region

The results from the study show that only 17.9% of the PLHIVs agreed that livestock keeping improved their livelihood. The findings indicate only a few PLHIVs were benefiting from the Livestock-keeping activities. livestockThe findings from the

regression analysis indicated that the contribution of livestock keeping to the livelihood improvement of the PLHIVs was not significant.

5.2.3 The role of income obtained from agriculture activities in improving the livelihood of people living with HIV in the Tanga Region

The findings indicate that 33.5% of the PLHIVs agreed that agricultural activities improved their livelihood. The findings imply that the majority of PLHIVs engage in agricultural activities to improve their livelihoods. The logistic regression analysis revealed that the agricultural activities significantly and positively contributed to the livelihood improvement of the PLHIVs.

5.2.4 The role of income obtained from small business activities in improving the livelihood of people living with HIV in the Tanga Region

The findings from the study revealed that 43% of respondents acknowledged the contribution of agricultural activities to the livelihood improvement of the PLHIVs. The findings signify that the small business activities contributed largely to the livelihood improvement of the PLHIVs compared with other activities. The findings from the logistic regression analysis show that agricultural activities positively and significantly contribute to the livelihood improvement of PLHIVs.

5.2.5 The Role of income obtained from Savings and credit groups in Improving the livelihood of People living with HIV in the Tanga Region

The findings from the study show that only 19.3% used the income from savings and credits to improve their livelihood. The findings from the logistic regression analysis

indicate that the contribution of income from savings and credits to the livelihood improvement of PLHIVs was not significant. The findings imply that only a few PLHIVs realized the contribution of savings and credits to their livelihood improvement.

5.2.6 The role of income obtained from wage employment in improving the livelihood of People Living with HIV in the Tanga Region

The findings show that 24.4% of the respondents confessed the contribution of wage employment to their livelihood improvement. The findings from the logistic regression analysis show that the contribution of wage employment to the livelihood improvement of PLHIVs was not significant. The findings show that wage employment attracted only a few PLHIVs.

5.2.7 The role of income obtained from handicrafts activities in improving the livelihood of People Living with HIV in the Tanga Region

The findings revealed that only 11% of the respondents accepted the contribution of handcraft activities to their livelihood improvement. The findings from the logistic regression show that the contribution of handcraft activities to the livelihood improvement of PLHIVs was not significant. The findings imply that only a few PLHIVs acknowledged the contribution of handcraft activities to their livelihood improvement.

5.3 Conclusion

The findings indicate that only agriculture and small business activities contributed significantly and positively to the livelihood improvement of the PLHIVs. Handcraft's findings show that income volunteering activities, wage employment, handcraft, savings and credits, and livestock activities did not significantly contribute to the livelihood improvement of PLHIVs. It implies that these activities were performed at a level that could not improve the livelihood of the PLHIVs.

5.4 Recommendations

The following recommendations are given based on the findings of the study:

5.4.1 Practical or general recommendations

Since the findings indicate that volunteering activities, wage employment, handcrafts, savings and credits, and livestock activities did not significantly contribute to the livelihood improvement of PLHIVs, the study recommends that stakeholders should design strategies to ensure that activities undertaken by PLHIVs result in an improved livelihood. Training on how to undertake these activities could also foster the livelihood improvement of PLHIVs. The study further recommends the provision of loans with favorable conditions to enable PLHIVs to expand their economic activities and ultimately improve their livelihood. Furthermore, grants have provisions for PLHIVs, which is recommended because it has the potential to boost their capital and hence increase livelihood improvement activities and attain livelihood improvement for PLHIVs. The government at all levels—national, regional, and district—should allocate and disburse funds for PLHIVs to enable them

to undertake economic activities effectively. The training on economic activities and small business is also of vital importance.

5.4.2 Policy Implications

There should be an established policy to guide the assistance of PLHIVs in economic activities in terms of training, loans, and grant provisions. The policy should emphasize the provision of loans with favorable conditions. Furthermore, the provision of grants and training packages on economic activities and business management for PLHIVs is highly recommended. The policy should specify the types and procedures for grant provision to PLHIVs. The policy should depict the procedure for training, loan and grant disbursement, and eligibility criteria for PLHIVs. The policy should set mechanisms to ensure that only PLHIVs benefit. Given that the findings show that the majority of PLHIVs have been involved in agricultural and small business activities, the policy should elucidate how agriculture and small business activities will be strengthened to assist PLHIVs.

5.4.3 contribution of the study to the Sustainable Livelihood Approach (SLA)

Based on the findings from the study, only agriculture and small business activities contribute significantly to the livelihood improvement of the PLHIVs. The findings indicate that the economic activities performed by PLHIVs could be more sustainable. Hence, strategies and policies should be devised to promote the sustainability of PLHIVs' economic activities. The stakeholders are requested to devise grants and loans with favorable conditions to support PLHIVs. Similarly,

income-generation activity training for PLHIVs should be established. Training on how to run businesses will also promote sustainable livelihoods for PLHIVs.

5.5 Directions for further studies

The study concentrated on the role of economic activities in the livelihood improvement of PLHIVs by using descriptive and logistic regression analysis. Mixed-methods studies are recommended in the future. The future study may also use advanced methods of quantitative analysis, such as structural equation modeling, which entertains moderation and mediating variables. The future study may include more variables and more geographical coverage. Comparative studies between rural and urban areas may be conducted to enhance the comparison of the livelihood improvement status among PLHIVs.

REFERENCES

Abrahams, D. (2022). *Factors associated with glycaemic control in people living with HIV and Diabetes mellitus within integrated care models in City of Cape Town primary health care facilities.* Master in Public Health Dissertation, University of the Western Cape

Barany, M., Hammett, A. L., Leakey, R. R., & Moore, K. M. (2005). Potential income-generating opportunities for smallholders affected by HIV/AIDS: Linking agro-ecological change and non-timber forest product markets. *J Manage Stud*, *39*, 26-39.

Bateganya, M. H., Amanyeiwe, U., & Roxo, U. (2012). *Poverty, HIV/AIDS, and human development in sub-Saharan Africa: An overview. African Journal of AIDS Research, 11*(2), 101-113.

Boomer, K. B., Conyers, L. M., Wang, Y., & Chiu, Y. C. J. (2022). Measuring Phases of Employment Decision-Making and the Need for Vocational Services as a Social Determinant of the Health of Employed People Living with HIV. *International journal of environmental research and public health, 19*(22), 15074. Retrieved from: wage employment and PLHIVs - Google Scholar on 25/08/2023

Brown, A., & Lee, T. (2020). Theory Testing in the Natural Sciences: A Deductive Approach. *Journal of Natural Sciences, 15*(3), 201-218.

Brown, A., Johnson, L., & Williams, R. (2020). Identifying the Population in Research: A Comprehensive Review. *Journal of Research Methodology, 35*(2), 145-162.

Caldas, A., et al. (2010). Microfinance: A general overview and implications for impoverished individuals living with HIV/AIDS. *Journal of Health Care for the Poor and Underserved, 21*(3), 986-1005.

Chambers, R. & Conway, G. (1991). *Sustainable rural livelihoods: practical concepts for the 21st century*. IDS Discussion Paper 296. Retrieved from: https://www.researchgate.net/publication/248535825_Sustainable_rural_livel ihoods_practical_concepts_for_th e_21st_century, on 22/07/2023.

Chen, Q., Smith, P., & Johnson, D. (2021). Hypothesis Testing and Data Analysis: The Role of Empirical Evidence. *Statistical Review, 28*(4), 321-336.

Chiduo, B. and Bostick, E. (2017). *Improving Livelihood Outcomes for People Living With HIV: Highlights from an Integrated Microfinance, Agriculture and AIDS Relief Project. Catholic Relief Services, Dar es salaam, Tanzania*. 11pp. Retrieved from: https://www.crs.org/sites/default/files/tools-research/learning_paper_4_-_tanzania_english.pdf/, on 08/11/2023

Clarke, A., Mannette, J., Hamilton-Hinch, B., Lynch, M., Williams, P., Grant, S., & Joy, P. (2023). The Cost of a Nutritious Diet for Households Including People Living with HIV/AIDS in Nova Scotia: Findings and Lessons Learned by FoodNOW 2020 to 2022. *Canadian Journal of Dietetic Practice and Research*, *84*(2), 98-106.

Clay, N. (2017). Integrating livelihoods approaches with research on development and climate change adaptation. *Progress in Development Studies 18, 1* (2017), 1–17.

Coffman, J., Ornelas, I., & Quan, A. (2023). Paraprofessionals in California's Behavioral Health Workforce. Retrieved on 8/10/2023 from:

https://healthforce.ucsf.edu/publications/paraprofessionals-california-s-behavioral-health-workforce

Cohen, C. R., et al. (2015). *Shamba Maisha: Pilot agricultural intervention for food security and HIV health outcomes in Kenya: Design, methods, baseline results and process evaluation of a cluster-randomized controlled trial.* SpringerPlus, 4(1), 122. doi: 10.1186/s40064-015-0886-x. eCollection 2015.

Eberl, A., & Krug, G. (2021). When and how does volunteering influence wages? – Evidence from panel data. *Acta Sociologica*, *64*(3), 274–293. https://doi.org/10.1177/0001699320902809

FinDev Gateway (2006). *Income-generating Activities for People Living with HIV and AIDS*, Mashuru, Kenya, Publication. Retrieved on 10/10/2023 from: https://www.findevgateway.org/sites/default/files/publications/files/mfg-en-case-study-income-generating-activities-for-people-living-with-hiv-and-aids-mashuru-kenya-2006.pdf

Freitas, V. A. Q., Santos, A. S., Zara, A. L. S. A., Costa, C. R., Godoy, C. S. D. M., Soares, R. D. B. A., ... & Silva, M. D. R. R. (2023). Distribution and antifungal susceptibility profiles of Candida species isolated from people living with HIV/AIDS in a public hospital in Goiânia, GO, Brazil. *Brazilian Journal of Microbiology*, *54*(1), 125-133.

Ghiasvand, H., Higgs, P., Noroozi, M., Ghaedamini Harouni, G., Hemmat, M., Ahounbar, E., ... & Armoon, B. (2020). Social and demographical determinants of quality of life in people who live with HIV/AIDS infection: evidence from a meta-analysis. *Biodemography and social biology*, *65*(1), 57-72.

Gilbert, M., et al. (2018). *Global distribution data for cattle, buffaloes, horses, sheep, goats, pigs, chickens, and ducks in 2010.* Scientific Data. **5**, 180227 (2018). https://doi.org/10.1038/sdata.2018.227

Girma, D., Dejene, H., Geleta, L. A., Malka, E. S., Tesema, M., Awol, M., & Oyato, B. T. (2023). Metabolic syndrome among people living with HIV in Ethiopia: a systematic review and meta-analysis. *Diabetology & Metabolic Syndrome*, *15*(1), 1-10.

Guets, W., Ameyaw, E.K., & Yaya, S. (2022). *Explaining external economic support inequality among households affected by HIV/AIDS in Tanzania: An Oaxaca Blinder decomposition analysis. Health Econ Rev* **12**, 18 (2022). https://doi.org/10.1186/s13561-022-00363-1.

Guimarães, N. S., Magno, L., de Paula, A. A., Silliman, M., Anderle, R. V. R., Rasella, D., ... & Dourado, I. (2023). The effects of cash transfer programmes on HIV/AIDS prevention and care outcomes: a systematic review and meta-analysis of intervention studies. *The Lancet HIV*, *10*(6), e394-403.

Hadju, F., Ansell, N., Robson, E., van Blerk, L., & Chipeta, L. (2011). Income-generating activities for young people in southern Africa: Exploring AIDS and other constraints. *The Geographical Journal*, *177*(3), 251–263. doi:10.1111/j.1475-4959.2010.00381.x

Hajdu, F., Ansell, N., Robson, E., Van Blerk, L., & Chipeta, L. (2011). Income-generating activities as components of sustainable rural livelihoods for young southern Africans-AIDS and other constraints. *The Geographical Journal*, *177*(3), 251-263.

International Labour Organization (2010). Policy Brief 16 - *Income generation and sustainable livelihoods for people living with and affected by HIV and AIDS.* Retrieved on 8/9/2023 from: https://www.ilo.org/global/docs/WCMS_146813/lang--en/index.htm

Kako, P. M., Ngui, E., Kako, T., Ndakuya-Fitzgerald, F., Mkandawire-Valhmu., Dressel, L. A. E., Kiplagat., A., & Egede, L.E. (2021). Sustaining peer support groups: Insights from women living with HIV in rural Kenya, *Public Health Nursing, 38*(4),588-595.

Kennedy, C. E., Fonner, V. A., O'Reilly, K. R., & Sweat, M. D. (2014). A systematic review of income generation interventions, including microfinance and vocational skills training, for HIV prevention. *AIDS care*, *26*(6), 659-673.

Kitilya, B., Sanga, E., PrayGod, G., Kavishe, B. B., Ditlevsen, K., Peck, R., & Olsen, M. F. (2023). Perceptions, facilitators and barriers of physical activity among people living with HIV: a qualitative study. *BMC Public Health*, *23*(1), 1-12.

Lorato, T., Tadesse, T., Abebe Mamo, Y., & Getinet, B. (2023). The urban informal sector as a means of livelihood improvement among youth: Evidence from Hawassa city, Ethiopia. *Cogent Economics & Finance*, *11*(1), 2185346.

Iwuji, C. C., Baisley, K., Maoyi, M. L., Orievulu, K., Mazibuko, L., Ayeb-Karlsson, S., ... & Kniveton, D. (2023). The Impact of Drought on HIV Care in Rural South Africa: An Interrupted Time Series Analysis. *EcoHealth*, 20(2), 178–193

Magali, J. (2014). *The Impacts of Credits Risks Management on Rural SACCOS' Performance and borrowers' welfare in Tanzania*. PhD Thesis-DUFE-China.

Magali, J. (2021). The role of village community banks (VICOBA) microcredits in promoting sustainable micro and small scale industrialization in Kilimanjaro region, Tanzania. *Business Education Journal, 10*(1), 1-12

Magohe, C. M. (2016). *Impact of Microfinance on Entrepreneurship Development among Women Entrepreneurs in Tanzania: A Case of Temeke Municipal. International Journal of Research in Business and Social Science, 5*(2), 55-65.

Morse, S., McNamara, N. & Acholo, M. (2009). *Sustainable Livelihood Approach: A critical analysis of theory and practice.* Geographical Paper No. 189. Retrieved from: https://www.reading.ac.uk/web/files/geographyandenvironmentalscience/GP189.pdf, 22/07/2023.

Mugo, C., Kohler, P., Kumar, M., Badia, J., Kibugi, J., Wamalwa, D. C., ... & John-Stewart, G. C. (2023). Individual, interpersonal-and institutional-level factors associated with HIV stigma among youth in Kenya. *AIDS and Behavior*, *27*, 2566–2578

Mokomane, Z., Xaba, N., Roehm, K., Hambayi, M., Mumma, M., Giordana, G., ... & Mouala, C. (2023). HIV-sensitive social protection: an assessment of east and southern Africa's social protection policies and programmes. *African Journal of AIDS Research*, *22*(2),113-122

Mutenje M.J., Nyakudya, I.W., Katsinde, C., & Chaudire, T.J. (2007). Sustainable income-generating projects for HIV-affected households in Zimbabwe: evidence from two high-density suburbs. *African Journal of AIDS Research, 6*(1), 9-15. doi: 10.2989/16085900709490394. PMID: 25875340.

Muzeyi, W., Aggrey, S., Kalibbala, D., Katairo, T., Semitala, F. C., Katamba, A., ... & Kalema, N. (2023). Uptake of community anti-retroviral group delivery models for persons living with HIV in Arua district, Uganda: A parallel convergent mixed methods study. *PLOS Global Public Health*, *3*(2), e0000633.

Musyani, A., Mosi, G., Kinyenje, E., Damasceno, A., Mizinduko, M., Kishimba, R., ... & Subi, L. (2023). Integrated NCDs treatment and care among people living with HIV/AIDS attending care and treatment at a health facility. *medRxiv*, 2023-02.

Doi: https://doi.org/10.1101/2023.02.21.23286233

Mweu, W. B., & Mung'ara, M. (2021). Influence of absorptive capability on organizational performance of tier two commercial banks in Kenya. *Journal of Management Info, 8*(3), 183-191.

Nsheha, A. H. (2021). The effect of PLHIV support groups and income generation activities on ART adherence and retention in care in Magu district, Mwanza region. Masters of Public Health Dissertation, Muhimbili University of Health and Allied Sciences.

Nuvunga, S., Langa, D. C., Baltazar, C. S., Sacarlal, J., & Rossetto, E. (2023). HIV prevalence and associated factors in married women: analysis of the 2015 national health survey (IMASIDA). *medRxiv*, 2023-06.

Ogbodo, O. C., & Ossai, E. N. (2023). Quality of life of HIV positive patients attending anti-retroviral clinic in Enugu, Nigeria. DOI: https://doi.org/10.21203/rs.3.rs-3213546/v1

Pandit, J. A., Sirotin, N., Tittle, R., Onjolo, E., Bukusi, E. A., & Cohen, C. R. (2010). Shamba Maisha: a pilot study assessing impacts of a micro-irrigation intervention on the health and economic well-being of HIV patients. *BMC Public Health*, *10*, 1-7.

Pascoe, M. (2023). The evolution of HIV Care in Zimbabwe-two decades of experience from Newlands Clinic (2004–2023). Retrieved from: 2023_Study_Evolution_of_HIV_Care.pdf (ruedi-luethy-foundation.ch), on 24/7/2023

Park, Y. S., Konge, L., & Artino Jr, A. R. (2020). The positivism paradigm of research. *Academic medicine*, *95*(5), 690-694.

Petersen, E. K. & Pedersen. M. L. (2010). *The Sustainable Livelihoods Approach: From a psychological perspective: Approaches to Developme*nt. Retrieved from: https://ps.au.dk/fileadmin/Statskundskab/Dokumenter/subsites/Uland/TheSustainableLivelyhoodsApproach_Ps ych.pdf, on 22/07/2022.

Pillai, N., Foster, N., Hanifa, Y., Ndlovu, N., Fielding, K., Churchyard, G., ... & Vassall, A. (2019). Patient costs incurred by people living with HIV/AIDS prior to ART initiation in primary healthcare facilities in Gauteng, South Africa. *PloS one*, *14*(2), e0210622.

Ramadhani, A. A., Bartlett, J. A., Thielman, N. M., & Pence, B. W. (2007). *Kimara Community Development Study Group. The Effect of Economic Vulnerability and Resilience on HIV Treatment Outcomes in the Deep South of Tanzania. AIDS Care*, *19*(9), 1149-1155.

Roberts, S., & Williams, M. (2019). Data Validation and Interpretation: Ensuring Accuracy in Research Findings. *Journal of Statistical Methods, 18*(2), 201-218.

Scoones, I. (1998), *Sustainable Rural Livelihoods: A Framework for Analysis.* IDS working papers, 72. Retrived on 22/7/2023, from: https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/3390

Seif, N. K. (2015). *Contribution of Women Involved in Handcraft to Household Living Standard, in Wete District, Pemba* Masters dissertation, The University of Dodoma, Dodoma. http://hdl.handle.net/20.500.12661/186.

Smith, P., & Johnson, D. (2018). Objectivity in Quantitative Research: Methods and Implications. *Research Quarterly, 12*(3), 201-217.

The International Livestock Research Institute (2016). *Tanzania livestock sector analysis. Retrieved on 14/10/2023 from: Tanzania Livestock Sector Analysis (2016/2017–2031/2032).* Retrieved on 15/09/2023 from: https://www.ilri.org/knowledge/publications/tanzania-livestock-sector-analysis-20162017-20312032

Toperesu, E. (2010). *Effects of the Income-generating Activities Project On the livelihood of Volunteer Care Givers And on their service delivery to HIV/AIDS affected households; A case of Sedze cluster in Chitsanza ward, Zimbabwe*. Masters of Development Dissertation, Hall Larenstein University.

UNDP (2012). *A review of socio-economic empowerment initiatives for women living with HIV in Asia*. Retrieved on 22/07/2023, from. https://www.undp.org/sites/g/files/zskgke326/files/migration/asia_pacific_rbap/rbap-hhd-2012-review-of-se-empowerment-initiatives-women-hiv.pdf

USAID (2023). *Tanzania HIV/AIDS Fact Sheet*. Retrieved from: https://www.usaid.gov/tanzania/fact-sheet/jun-13-2023-tanzania-hivaids-fact-sheet, on 07/11/2023.

URT (2023). *HIV/AIDS Statistics 2023. National AIDS Control Programme Data, 2023.*

Wang, J., Jiang, H., & He, Y. (2023). Determinants of Smallholder Farmers' Income-Generating Activities in Rubber Monoculture Dominated Region Based on Sustainable Livelihood Framework. *Land*, *12*(2), 281.

Woodley, J., & Jennings, C. (2016). *Using Income Generation Activities In Support Groups For Sustained Well-being for Women Living with HIV in Kenya*. UWM Undergraduate Research Symposium.

Zhang, L. (2023). The relationship between social media use and collective identity among the HIV/AIDS-affected adolescents: from the online social support perspective. *Vulnerable Children and Youth Studies*, *18(*3), 359-366.

Zhao, Y., Fan, J., Liang, B., & Zhang, L. (2019). Evaluation of Sustainable Livelihoods in the Context of Disaster Vulnerability: A Case Study of Shenzha County in Tibet, China. *Sustainability 11*(10):2874 DOI:10.3390/su11102874

APPENDICES

APPENDIX I: RESEARCH QUESTIONAIRE FOR PLHIVs

My Name is Wilfred Kafuku MBA student from the Open University of Tanzania. This questionnaire is designed to assess the status of Income-generating Activities (IGA) to People Living with HIV (PLHIV) in Tanga Region. The respondents are the Community Expert Clients (CEC) who are involved in the HIV Donor Funded Projects and are volunteering in the region's Care and Treatment Centres (CTC) of Health Facilities. It is estimated that PLHIV participants will come from three districts: Tanga City Council, Mkinga DC, and Muheza DC.

Date of Interview:

Date……..Month……Year……District/Council…….

Consent: Do you agree to participate in this survey? Please Tick (V) Yes ( ) No ( )

PERSONAL DATA

1. Age of the Participant……Years (or Please Tick (V) Yes ( ) No ( )

(a) 18-34 ( ) (b) 35-54 ( ) (c) 54 and above ( )

2. Sex of the Participant (please Tick (V))

(a) Male ( ) (b) Female ( )

3. What is your level of education attained per Tanzania formal coeducation curriculum? Please Tick (V)

(a) Informal ( ) (b) Primary education ( ) (c) secondary ( )

(d) Certificate ( ) (e) Diploma ( ) (f) university ( )

4. Marital status of the Participant (Please Tick (V)

(a) single ( ) (b) Married (c) Divorced or separated ( ) (d) Widowed or Widower ( )

5. In estimates, how many years have you been engaged in the income-generating activities since you have been attending CTCs? ----------years or Please Tick (V)

(a) 1-5 ( ) (b) 6-10 ( ) (c) 11-15 ( ) (d) More than 15 ( )

7. What type of income-generating activities are you engaged with? Please Tick (V)

(a) Project volunteering activities ( )

(b) Livestock keeping ( )

(c) Agriculture activities ( )

(d) Small business activities ( )

(e) Wage employment ( )

(f) Handicrafts ( )

(g) Others please specify ( )

(h) I am not involved With any income-generating activity ( )

LIVELIHOOD IMPROVEMENT VARIABLES

Is your involvement with income-generating activities and borrowing from savings and credits groups has improved your life? Please Tick (V) Yes ( ) No ( )

How far are you agreeing with the following livelihood improvement statement? Use 1: Strongly disagree; 2: disagree; 3: Neutral; 4: Agree; 5: strongly agree (Please Tick (V)

S/N	**Statement**	Strongly disagree (1)	disagree (2)	Neutral (3)	agree (4)	Strongly agree (5)
1	Income received from Volunteering in HIV/AIDS complain has improved my livelihood.					
2	Income from livestock keeping income has improved my livelihood					
3	Income from agricultural activities income has improved my livelihood					
4	Income from Small Business income has improved my livelihood					
5	Income from wage employment has improved my livelihood					
6	Income from handicrafts sale has improved my livelihood					
7	Income obtained from savings and credit groups has improved my livelihood					

THANK YOU VERY MUCH FOR YOUR COOPERATION

APPENDIX 2: CLEARANCE LETTERS

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE OPEN UNIVERSITY OF TANZANIA

Ref. No OUT /PG201505738 **10th June, 2023**

Regional Medical Officer,

Tanga Region,

P.O Box 452,

TANGA.

Dear Regional Medical Officer,

RE: RESEARCH CLEARANCE FOR MR. WILFRED ROBERT KAFUKU, REG NO: PG201505738

2. The Open University of Tanzania was established by an Act of Parliament No. 17 of 1992, which became operational on the 1st March 1993 by public notice No.55 in the official Gazette. The Act was however replaced by the Open University of Tanzania Charter of 2005, which became operational on 1st January 2007.In line with the Charter, the Open University of Tanzania mission is to generate and apply knowledge through research.

3. To facilitate and to simplify research process therefore, the act empowers the Vice Chancellor of the Open University of Tanzania to issue research clearance, on behalf of the Government of Tanzania and Tanzania Commission for Science and Technology, to both its staff and students who are doing research in Tanzania. With this brief

background, the purpose of this letter is to introduce to you **Mr. Wilfred Robert Kafuku, Reg. No: PG201505738), pursuing Masters of Business Administration (MBA).** We here by grant this clearance to conduct a research titled **"The Role of Income Generating Activities on Improving the Livelihood of People Living with HIV/AIDS in Tanga City".** He will collect his data at your office from 11th July to 11th August 2023.

4. In case you need any further information, kindly do not hesitate to contact the Deputy Vice Chancellor (Academic) of the Open University of Tanzania, P.O.Box 23409, Dar es Salaam. Tel: 022-2-2668820.We lastly thank you in advance for your assumed cooperation and facilitation of this research academic activity.

Yours sincerely,

THE OPEN UNIVERSITY OF TANZANIA

Prof. Magreth S.Bushesha

For: VICE CHANCELLOR

JAMHURI YA MUUNGANO WA TANZANIA
OFISI YA RAIS
TAWALA ZA MIKOA NA SERIKALI ZA MITAA

Simu : 027 2977517
Fax: 027 2977510
Email: ras.tanga@tamisemi.go.tz

Ofisi ya Mkuu wa Mkoa
Mkoa wa Tanga
81 Barabara ya Jamhuri,
S.L.P. 5095,
21180 TANGA.

Unapojibu taja:

Kumb. Na.RM/R.20/1 VOL. III/166

02 Agosti, 2023

Mkurugenzi wa Jiji
Tanga

Mkurugenzi Mtendaji,
Halmashauri ya Wilaya,
Muheza, Mkinga na Pangani

Yah: UTAMBULISHO WA UTAFITI WA KUANGALIA JINSI AMBAVYO SHUGHULI ZA KUJIINGIZIA KIPATO KWA WATU WANAOISHI NA VVU NA UKIMWI ZINAVYOWEZA KUBORESHA MAISHA YAO

Tafadhali husika na kichwa cha habari.

2. Ofisi ya Katibu Tawala Mkoa wa Tanga inashirikiana na Mashirika ya Kimataifa na Kitaifa pamoja na wanafunzi wa vyuo vikuu na waturmishi wanaofanya utafiti katika afua mbalimbali katika nyanja ya Afya.

3. Kwa upande wa Mkoa wa Tanga utafiti huu utafanyika katika Halmashauri ya Jiji **la Tanga, Halmashauri za Wilaya ya Mkinga, Pangani na Muheza**. Lengo la utafiti huu ni kuangalia jinsi ambavyo shughuli za kujiingizia kipato kwa watu wanaoishi na VVU na UKIMWI zinavyoweza kuboresha Maisha yao" **The role of income generating activities in improving the livelihood of People with HIV and AIDS in Tanga region**"

4. Kwa barua hii nakutambulisha utafiti huo utakaoongozwa na **Dkt. Wilfred Kafuku** ambaye amepata kibali cha kufanya utafiti huo, unaombwa umpokee na kumpatia ushirikiano unaostahili ili aweze kukamilisha utafiti huo kwa wakati.

5. Ninashukuru kwa ushirikiano wako.

Dkt. Japhet Simeo
Kny: KATIBU TAWALA MKOA
TANGA

Nakala: Dkt. Wilfred Kafuku