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**Contribution of Human Capital on Poverty Reduction in Rural Areas of Uganda. A Case of Kisoro District**

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### Contribution of Human Capital on Poverty Reduction in Rural Areas of Uganda. A Case of Kisoro District



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#### Abstract

**Purpose:** The study was about the contribution of human capital on poverty reduction in rural areas of Uganda taking Kisoro district as a case study. In Uganda, poverty in rural areas had remained a challenge as depicted by 31 percent of population below poverty line as of financial year 2016/2017 (UBOS, 2018) having risen from 22.8 percent in financial year 2012/2013 (MoFPED, 2014). In Kisoro district, poverty was high as manifested by low household access to electricity (7.6%), piped water (33.7 %), high illiteracy levels, food insecurity, poor housing conditions where 84.6% of households lived in semi- permanent dwelling units (UBOS, 2017). The purpose of the study was to examine how human capital could contribute to poverty reduction in rural areas of Uganda taking in Kisoro district as a case study.

**Methodology:** The study was carried out in Kisoro district on 391 respondents against the targeted 400 which represented 97.8 % response rate. The respondents included farmers, district technical staff, business entrepreneurs, agricultural industrialists, political, religious and opinion leaders. The study triangulated both quantitative and qualitative approaches and a cross- sectional survey was used. Data collection methods used included: survey, interviews, observations and review of primary and secondary documents; while the tools used were self-administered questionnaires, interview guide, interview schedule, observation plan and its checklist, a camera and a recorder.

**Findings:** The study findings established that education could significantly ensure rural poverty reduction in Kisoro district, with a positive and significant relationship between them ( $r = 0.415, p < 0.05$ ). Education also explained 23.2% of the contribution on rural poverty reduction. Training had a significant effect on rural poverty reduction in Kisoro district with a positive and significant relationship between them ( $r = 0.267, p < 0.05$ ). Training also explained 9.1% contribution to rural poverty reduction. There was significant relationship between human capital and rural poverty reduction in Kisoro district

**Unique Contribution to Theory, Practice and Policy:** It was concluded that human capital had a great contribution towards poverty reduction in rural areas. The study recommended that; public education, research and development, science and technology and enabling policies could sustainably be promoted for enhanced productivity, poverty reduction and development.

**Keywords:** Human Capital, Rural Poverty Reduction, Innovation, Investment

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## INTRODUCTION

Poverty in rural areas of Uganda and particularly in Kisoro district was high. In Uganda, rural poverty was at 31 percent of people below poverty line as of financial year 2016/2017 (UBOS, 2018) having risen from 22.8 percent in financial year 2012/2013 (Poverty Status Report, 2014).

Worse still, during the time of this study, more report on the survey conducted by Uganda National Household Survey in 2019/2020 established that; whereas the people below poverty line had reduced from 21.4 percent in financial year 2016/2017, to 20.3 percent in financial year 2019/2020, the absolute numbers of poor persons had risen from 8 million in year 2016/2017 to 8.8 million in year 2019/2020 whose population was estimated at 41 million people (UBOS, 2021). More so in the same survey, the number of households in subsistence economy living below poverty line marked with subsistence farming, poor wage/ salary, low income generating activities and non-working households surviving on low donations or transfers or pensions; had increased from 3.3 million to 3.5 million between financial year 2016/2017 and 2019/2020 which depicted a glaring poverty situation in the country that needed to be addressed.

**Table 1: A Summarized Tabulated Trend Analysis of Poverty in Uganda for Selected Financial Years (FY) between 2002-2017**

		<b>FY2002/ 2003</b>	<b>FY2005/ 2006</b>	<b>FY2009/ 2010</b>	<b>FY2012/ 2013</b>	<b>FY2016/ 2017</b>
Population Size		25.3 Million	27.2 Million	30.7 Million	34.1 Million	37.7 Million
Number of people below poverty line		9.8 Million	8.4 Million	7.5 Million	6.7 Million	8 Million
Percentage of people below poverty line	National	38.8%	31.1%	24.5%	19.7%	21.4%
	Rural	42.7%	34.2%	27.2%	22.8%	31%
	Urban	14.4%	13.7%	9.1%	9.3%	15%

*Source: Uganda National Household Surveys, 2016/2017 (UBOS, 2018) and 2019/2020 (UBOS, 2018), Poverty Status report of 2014 (Mo FPED, 2014).*

From Table 1, the number of people below poverty line were computed using income poverty measure where income or consumption expenditure analysis was taken into consideration using Consumer Price Index as stated in Uganda Poverty Status report of 2014 (MFPED, 2014). The poverty line or poverty head count ratio of \$ 1.90 per day was the percentage of people living on less than \$ 1.90 per day as set by the World Bank and was the one used in Uganda as indicated in Uganda Poverty Assessment, 2016 (World Bank, 2016). Therefore, the 31% of rural population being below poverty line was a big number to worry about if poverty was to be addressed which necessitated this study.

In Kisoro district, rural poverty was also high as characterized by poor nutrition with only 9.7 percent of households being food secure (Spring, 2016) and 11.4 percent of households with members of 5 years and above consuming less than two meals a day (UBOS, 2018). More so, there was also limited access of households in Kisoro district to electricity at only 7.6 percent and to piped water at only 33.7 percent and with 86.2 percent of the households derived their livelihood from subsistence farming that had low income returns (UBOS, 2018). The deprivation of the people characterized by limited access to social services like electricity, safe water, in addition to poor nutrition and subsistence farming practices negatively contributed to their rural poverty and associated poor standards of living.

The persistent poverty in general and rural poverty in particular led to numerous government interventions to address their challenge which included electricity supply, road infrastructure, ICT connectivity, (National Planning Authority, 2015) but all never produced significant and sustainable positive effect on poverty reduction as manifested by its rise. The study therefore, established how human capital could economically transform Uganda in general and Kisoro district in particular thereby registering poverty reduction in rural areas. In this study, the relationships between human capital as an independent variable and poverty reduction in rural areas as a dependent variable were established. Education and training as dimensions of human capital were studied to ascertain their effect on rural poverty reduction.

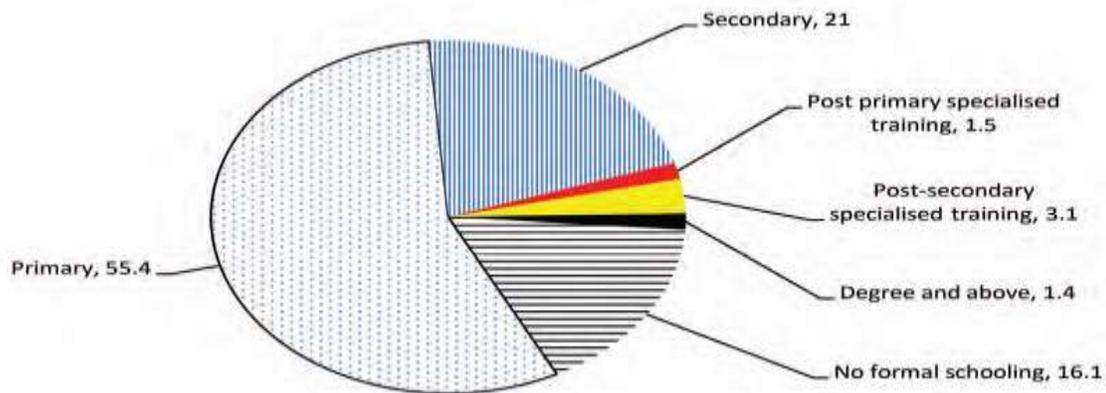
Kisoro district was identified for the study because of being a rural district with high poverty levels where about 11 percent of its households were getting one meal a day for adults and 27 percent of the households depending on earned income with the rest vulnerable to poverty shocks (UBOS, 2017). More so, the Gross Domestic Product (GDP) per capita values in Kisoro district as an indicator of standard of living was established to be at US \$ 192 which was far below the national GDP per capita average value of US \$ 580 (Rafa, Moyer, Wang and Sutton, 2017).

It was contended in this study that if human capital was effectively developed and harnessed, it could cause a difference in the wellbeing of the rural population. In this regard, human capital was important since efficient and effective utilization of resources like finances, land/ minerals, machinery and all other necessary logistics greatly depended on knowledge, abilities, skills, competencies and experiences of the human resources. However, the available human capital in Uganda was limited in both rural and urban areas as established in the National population and housing census 2014. As per the census, Uganda had inadequate and less harnessed human capital where 4.3 percent had completed tertiary level of education and 72 percent of the population were literate with 68.3 percent of the literate people living in rural areas implying that 31.7 percent were illiterate which was a high number if rural areas were to be transformed. In that census, the non-utilised labour force that were neither in employment nor under education or training were 58 percent with the non-working population in rural areas at 39.4 percent as compared 27.3 percent in urban areas. Potentially, rural areas constituted 0.3 percent of professionals, 1.4 percent of technicians, 0.2 percent of clerical staff, 5 percent of service workers, 2.7 percent of craft workers, 1.2 percent of plant and machine operators and it was subsistence agriculture that constituted 73.6 percent (UBOS, 2016). It was only subsistence agricultural workers whose range was above 59 percent of the working population across all age groups (UBOS, 2016). Such inadequate and less

harnessed human capital was an impediment to poverty reduction efforts since it offered a minimal economic contribution.

More so, the education attainment which was an indicator of the stock of human capital and the level of socio economic development, was also very low with only 4.3 percent of the population having completed tertiary level of education, 3.0 percent completed A' level, 15.4 percent completed O' level, 18.5 percent completed secondary school, 58.4 percent completed primary school and 18.9 percent never completed any education level as indicated in the National population and housing census, 2014 (UBOS, 2016). The Uganda National Household Survey 2012/2013 cited in the Second National Development Plan 2015/2016-2019/2020 (NPA, 2015) also reflected a low human capital stock for Uganda as shown in figure 1.1.

### **Education and skills status of the total working population in percentages.**



*Figure 1: Education and Skills Status of the Total Working Population in Percentages*

*Source: UNHS 2012/2013 in NDP 11 (2015/2016-2019/2020)*

From Figure 1, it was evident that the education attainment as a stock of human capital was very low and not so different from the findings of National population and housing census, 2014 (UBOS, 2016). This implied that for Uganda to realize economic growth and transformation from poverty, then its stock of human capital needed to be improved.

The human capital stock in Kisoro district was also limited. It was established in National population and housing census 2014, that for persons aged 18 years and above, 40 percent of them totaling to 48,453 persons of the 281,705 persons in Kisoro District, were illiterate yet these constituted a category of energetic workforce that could economically transform the economy if they possessed human capital potentials. Interestingly, it was further established in that census that, 4,088 persons constituting 3.4 percent and 1,187 persons constituting 1.1 percent of persons aged 20 years and above and who were not in school, had 'O' Level (Senior Four) and 'A' Level (Senior Six) respectively as their highest levels of education. Such low human capital base coupled with a large subsistence agricultural sector that was characteristically marked with low incomes could hardly drive the society from rural poverty.

This study therefore established how effective utilization and harnessing of human capital and promoting their potentials through education and training for human resources could enhance their abilities to deliver with efficiency for poverty reduction in rural areas of Uganda in general and Kisoro district in particular.

### **Problem Statement**

In Uganda, poverty in rural areas was a challenge as assessed using Multi-dimensional poverty index and income poverty measure. Multi-dimensionally, a person is construed as poor if he/she encountered 30 percent deprivation of non-income factors like education, electricity, water, among others (Sharma and Kumar, 2011). However, in Uganda's rural households, 22 percent had housing dwellings with cement screed floors, 84 percent used firewood for cooking, less than 1 percent and 17 percent used electricity for cooking and lighting respectively, while only 86.6 percent to safe water especially during wet season contrary to 75.4 percent during dry season (National Service Delivery Survey, 2015). Using income poverty measure where poverty line threshold was US \$ 1.90 per day (World Bank, 2015), Uganda's poverty in rural areas was at 31 percent of people below poverty line as opposed to 15 percent of urban people in financial year 2016/2017 (UBOS, 2018), having risen from 22.8 percent for rural population and 9.3 percent for urban population in financial year 2012/2013 (MoFPED, 2014).

In Kisoro district, majority of households were deprived (deprived in the context of multi-dimensional poverty index of 30%) with only 33.7 percent and 7.6 percent of them accessing piped water and electricity respectively and 11.4 percent of them having members of 5 years of age and above consuming less than 2 meals a day (UBOS, 2016). Regrettably, only 9.7 percent of households were food secure (Spring, 2016). These manifested poverty which was a concern and unless reversed, the people's economic situation would deteriorate.

This study attributed the persistent poverty in rural areas of Uganda to improper harnessing of human capital. Studies had established that human capital was crucial in poverty reduction for it could improve on the workforce quality, productivity and earnings (Khan, *et al.*, 2016). However, Uganda's labour market lacked the required skills with about 4 percent of Uganda's population having post-secondary school level education and students' enrolment in universities for science and technology courses being less than 27 percent quite below 40 percent UNESCO's minimum requirement for economic growth (National Planning Authority, 2015). This study therefore examined how human capital could contribute to poverty reduction in rural areas of Uganda, with a focus on Kisoro district. Emphasis was on education and training of the population for improved incomes and rural poverty reduction.

### **Purpose of the Study**

To examine how human capital could contribute to poverty reduction in rural areas of Uganda taking Kisoro district as a case study.

### **Study Objectives**

1. To establish how education could ensure rural poverty reduction in Kisoro district

2. To find out the effect of training on rural poverty reduction in Kisoro district.
3. To determine the relationship between human capital and rural poverty reduction in Kisoro district.

## **Scope of the Study**

### **Geographical Scope**

The study covered Kisoro district located in South Western Uganda being one of the rural districts in Uganda, with its population having been experiencing poverty for the last fifteen years under this study. The target population in Kisoro district was 281,705 participants who comprised of technical planning committees at District and Sub county levels, extension workers, farmers, business persons, political and religious leaders and other selected opinion leaders with knowledge on the concepts studied.

Administratively, Kisoro district was comprised of two counties being Bufumbira and Bukimbiri counties, one municipality, 13 Sub-counties and 7 Town Councils. The economy of the population was predominantly subsistence farming with 86.2 % of the households mainly depending on it for their livelihood as per the National population and housing census, 2014 (UBOS, 2017). The rest of the households depended on employment income, business enterprise, cottage industry, property income, family support, and other occupations all which implied that the average household income was very low.

### **Time Scope**

The study covered a period of 15 years from 2002 to 2017 by analyzing the trends of poverty in general and rural poverty in particular. This longitudinal analysis was long enough for analyzing the trend of poverty amidst several policies and interventions that had been put in place to mitigate it over a period under study.

### **Content Scope**

The study covered the human capital and its contribution towards poverty reduction in rural areas of Kisoro district. The human capital attained by people through education and trainings and their relationship with poverty reduction through access to social services, food security and entrepreneurial development in rural areas were examined in this study.

## **LITERATURE REVIEW**

### **Introduction**

Literature was reviewed on the effectiveness of human capital in rural poverty reduction. It established the existing literature on human capital and poverty which it used to develop the study. It further dealt with literature review of human capital dimensions of education, and training to ascertain their relationships with rural poverty reduction. The literature review was comprised of a review of related literature and conceptual framework as hereunder.

## Review of Related Literature

### Rural Poverty

Poverty was perceived differently by different theorists and scholars. United States department of Agriculture's Economic Research Service, defined individuals as being poor when their income could not purchase the basic needs of food, shelter, clothing and other essential goods and services (Weisenbeck, 2007). The World Bank (2016) basing on Weisenbeck (2007), defined poverty as lack or insufficiency of money to meet the basic goods and services for survival with dignity. Such could include food, shelter and clothing and which Mwabu, (2016) and (Tilak, 2002) referred to as income poverty. It is measured in monetary terms using the poverty line index.

However, the World Bank indicated that other than being an insufficiency of money to buy basic necessities, that it also took the form of deprivation in other crucial areas of the wellbeing of the people such as education, housing, water and health. This definition of poverty, entailed a deprivation of wellbeing, a liability or inability to satisfy one's basic needs due lack of income to buy services or from lack of access to services. Therefore, in the definition of poverty, it was notable that two forms of poverty being, income poverty and non- income poverty (Mwabu, 2016), affected the wellbeing of the people. In that respect, poor people were characterized as possessing poor health, hunger, poor education, poor housing among others; and in order to reduce poverty, there was need for interventions like increasing supply of basic needs for instance, health care and education, food and other goods, water and energy utilities, improving on government services, controlling population growth, controlling brain drains, increasing personal income through income grants, economic freedoms, financial services, remittances and removing cultural barriers to productivity.

However, the concept of poverty was relative in its meaning depending on its operational application and reality. Ravallion, Chen and Sangraula (2008), categorized poverty into absolute poverty and relative poverty where absolute poverty was regarded as a state of severe deprivation of basic human needs which commonly included food, healthcare, education, water, sanitation, clothing, shelter, and information. However, World Bank indicated that absolute poverty was synonymous with extreme poverty on the account that people under extreme poverty, survived on less than the determined poverty line threshold of US \$1.90 per day while moderate poverty as where a person lived on less than US \$ 2 or US \$ 5 per day since moderate poverty differed across societies or countries depending on their economic standards. Relative poverty on the other hand had been viewed by World Bank as socially defined and dependent on the social context. This implied that, one could be relatively poor without necessarily being in a state of absolute poverty; relative poverty could be used to measure income inequality within the society. It is an index of income inequality (Ravallion, *et al.*, 2008).

In the measurement of absolute poverty, there had been a set standard which was consistent over time and between countries unlike relative poverty which looked at income inequality. The poverty line threshold was used in measuring absolute poverty for income poverty and was set by World Bank in year 2015 was US \$ 1.90 per day. Previously in year 2008, it had been fixed by World Bank at US \$ 1.25 per day, having been reviewed from US\$1 per day in year 2005, and US \$ 1.08 per day in year 1993 (Ravallion, *et al.*, 2008). However, for some countries, this poverty

line did not apply for there was variation in determination of poverty line for some countries. For instance, in United States, the absolute poverty line was US \$ 15.15 per day in 2010 (US Census Bureau, 2011), in India, US \$ 1.0 per day (The World Bank, 2010) and in China US \$ 0.55 per day in 2010 (The Government of China, 2011). It all depended at the level of development of a country though World Bank determined an aggregate threshold for all countries.

The poverty line threshold only measures income poverty. However, for poverty measurement that takes into account non- income factors like education, health and access to other services that enhance on the standard of living like electricity, water, assets, among others, a Multi- dimensional Poverty Index (MPI) was developed under Oxford Poverty and Human Development Initiative (Sharma and Kumar, 2011). Using Multi- dimensional Poverty Index, a person was defined as multi- dimensionally poor, if for all the weighted indicators, he/ she experienced 30 percent deprivation as indicated by Sharma and Kumar. By implication, Multi- dimensional poverty index provided a higher threshold for the acceptable minimum standards of living, where people who could be living above poverty line, would be taken as multi- dimensionally poor if the measurement parameters/ indicators were considered (UNDP, 2014). Countries that used this poverty measure included India as noted by Sharma and Kumar and also used in Uganda as indicated by UNDP in poverty assessments as seen in Uganda Poverty Status Report (2014).

With this study focus being rural poverty, a number of definitions had been advanced on the concept of 'rural'. There had never been any definition for the term 'rural' because of the patterns of spatial occupation that were determined in accordance with particular cultures, history of the states or regions. However, according to the U.S Census Bureau, Rural was defined as a territory and population outside urbanized areas and urban clusters (Miller, 2010). Anriquez and Stamoulis (2007), defined the term rural on geopolitical methodology as any area excluded from an urban area and where an urban area was state, region or district capitals/ centres. Rural poverty therefore implied poverty found in rural areas including factors of rural society, rural economy and rural political systems that gave rise to poverty found there.

World Bank estimated that, there were about 1.29 billion poor people living below poverty line in 2008, with 75 percent of them living in rural areas for most of them depended on agriculture (World Bank, 2016). World Bank stated that in terms of percentage of regional populations, Sub-Saharan Africa had the highest incidence rate of absolute poverty of 47 percent in 2008. This World Bank's analysis was corroborated by Mwabu (2016), who indicated that African region had highest number of poor people in the world with majority of them living in rural areas.

### **Human Capital Concept**

The Concept of human capital was defined differently by different scholars and authors. Becker (1964), defined human capital as the abilities and qualities of people that made them productive. In further refining the definition of the human capital concept, Becker (2010), defined it as the education, training, skills and health possessed by individuals that made them productive. Dess and Picken (1999) cited in CIPD (2017), Dae-Bong (2009) commonly defined human capital as knowledge, skills, and experiences that a person possessed which added value to the organization or company. The human capital definition by Ostrom (2001) in Fisher *et al.*, (2014) was that it was the knowledge and skills that an individual put into an activity, which was synonymous with

the definition given by Dess and Picken since it also stressed that knowledge and skills were the elements of human capital.

To obtain human capital, it was argued that there was always an investment in it through education and training for the acquisition of the requisite knowledge, skills, competencies, attitudes and experiences (Dae-Bong, 2009). The implication of Dae-Bong's argument was that, a person endowed with higher education, training or experience could have higher comparative advantage in earnings over others with less or none, thus crucial for investing in it. In a nut shell, human capital entails education, training and medical/ health services that enable one to attain certain experiences, skills/ competencies, abilities, and attributes for an individual to diligently perform an activity. The human capital components are hereunder elaborated.

### ***Education***

Hornby (2010), defined education as a process of teaching, training and learning especially in schools or colleges to improve and develop skills. Education is therefore the process of facilitating learning which involves acquisition of knowledge, skills, values, beliefs and habits aimed at making the acquirer attain a difference in performance, society and life. Education has been seen as a vital ingredient of human capital. Tormey (2007), argued that education was an instrument for development where the socially and economically marginalized sections of the society could rise up to social and economic prosperity through utilization of the acquired knowledge, skills and qualifications to attain employment with better remuneration.

Education was also categorized as either formal, non- formal or informal (Kuchař, 2007), depending on the area being aspired for by an individual. It is notable that, Smith (1776), in Kuchař, argued that acquisition of skills during education was at a cost. However, education as a form of investment had returns which came in form of salaries to the individuals, productivity to the company and technological progress to the society, a result of enhanced quality of people.

### **Training**

Training is an act of teaching a person a skill or type of behaviors that have a relationship with particular competencies. It is a process of learning the skills that one needs to do a job (Hornby, 2010). This study found, training to involve organized activities aimed at imparting knowledge and skills for competencies in performance. Mincer (1962) indicated that, training could take the form of on- the- job training and was vital for individuals for it equipped them with skills and competencies that enabled them to diligently execute tasks for better performance which in turn yielded higher financial returns.

The implication was that, training ought to be emphasized for skilling the people on the best practices in execution of activities and addition of value to work and produce so as to realize better remuneration, output and financial benefits that resulted into improved standards of living.

### **Health Services**

Health services are provided to keep good or improve on the health condition of the people. Health services are also a component of human capital in a sense that they strengthen the capabilities of the people to perform their tasks. They could include but not limited to deliveries for preventing

infant, child or maternal mortality like through immunizations; prevention and treatment of communicable and non- communicable diseases so as to keep the people potentially productive.

On the whole, education, training and health services are vital components of human capital that perfect performance. However, this study focused on education and training as human capital components because of their great role in production, innovation, growth and economic development which had a direct effect on reducing poverty.

### **Relationship between Human Capital and Poverty**

In this review, the study established the relationship between human capital and poverty with a view of finding out how the former reduced poverty. Eradication and / or reduction of poverty had remained a developing world challenge and mainly a rural phenomenon due to mainly the homogeneity of the population (Khan, Iqbal and Rehman, 2016). In their assertion, Khan, *et al.*, indicated that poverty had a direct connection with human capital and for that matter, to concisely deal with the poverty challenge, there could be improvement of human capital through education, training for skills and improvement of health services.

The significance of human capital in reducing poverty had also been supported by Becker (2010), who estimated United States of America and other developed countries to be having human capital constituting about 80 percent of their total capital or wealth, a reason they were rich. Becker, indicated that even the first growing nations like the Asian economies being Taiwan, Japan, Hongkong, South Korea had registered positive trends in economic growth and development due to being endowed with a well-educated and trained workforce committed to service. Becker, gave an analogy of some nations that had economically stagnated like North Korea with coal and particularly others in Africa, yet they were endowed with natural resources which could economically transform them if at all their human capital resource component could have been utilized or developed. Becker noted that development of human capital through education and training promoted efficiency, growth thereby reducing poverty and reducing income inequalities since educated and trained people from poor backgrounds could grow in their economic status.

The importance of human capital in transforming the economy had also been advanced by Dao (2008), Ali and Ahmad (2013), who indicated that to realize poverty reduction and economic development, there could be improvements in education and health services for they in turn led to enhanced productivity and earnings of workers. Pelinescua (2015), noted that human capital was an important factor for economic growth with direct positive relationship with the Gross Domestic Product (GDP) per capita. Dao; Becker; Slaus and Jacobs (2011), Kayode (2012); Ali and Ahmad; and Khan, *et al.* (2016), found out that human capital was instrumental in improving on the quality of the workforce for enhanced productivity, earnings, economic growth and development.

Ali and Ahmad like Slaus and Jacobs recommended promotion of education as key to individual and societal progress by arguing that enhancement of primary, secondary, tertiary school opportunities and literacy programs to all people including the girl child to reduce the gender education and income disparity could reduce poverty. Todaro and Smith (2006), and Ahmad and Lugman, (2012) in Ali and Ahmad (2013), argued that, to promote education, governments could systematically put emphasis on enhanced primary school enrolment. Ali and Ahmad therefore

stressed the need for an enhanced school child enrolment, recruitment of trained teachers and re-training teachers for more teaching competencies and increasing the education sector budget.

Khan, *et al.*, (2016), viewed education as the foundation of human capital where all the skills, knowledge and abilities espoused in it could only be attained and stressed the need for promoting education if human capital was to be developed for poverty reduction with an assumption that the more one got educated, the more were the salary/ wage earnings and the richer he or she became thereby reducing poverty. They noted that since poverty was prevalent in rural areas, then education opportunities could put special focus to these areas and also give attention to the vulnerable females. The role of education in rural poverty reduction was also commended by Tilak (2002) who indicated that provision of education, health and other services could enhance peoples' potential to earn more and drive them out of poverty.

Like Tilak, Tormey (2007), also noted that education was central and primary means to development where people could transform themselves from poverty and have sustainable livelihoods due to the knowledge, skills, cultural and social capital and qualifications that enabled them attain better paid employments and thus argued that improving education would be a sustainable anti- poverty strategy. Hanushek (2018) observed that, high quality education endowed with workers' cognitive skills, determined future individual and economic development rates. Hanushek noted that if a nation increased its cognitive skills and education attainment of its population, its economic growth rate would rise in the long run. Therefore, both Tormey, and Hanushek agreed in common that knowledge and skills acquired through education, improved peoples' productivity that yielded for better earnings thereby doing away with poverty.

However, the central role of human capital in poverty reduction had been viewed in its application in other areas. Fisher, Patenaude, Giri, Lewis, Meir, Pinho, Rounesevell and Williams (2014), argued that the level of human capital that one possessed, mattered on how other resources were managed, utilized and controlled like ecosystem services. Turner, Brandon, Brooks, Gascon, Gibbs, Lawrence, Mittermier and Selig, (2012), noted that, sustainable conservation and exploitation of natural resources could largely depend on investments in human capital like education though there could also be investments in technology and infrastructure. However, it is also worth to note that technology and infrastructural investments are also operated by a competent, well trained and educated work force. Whereas Obayelu and Ogunlade (2006), indicated that poverty could be reduced through embracing Information, communication and technology (ICT), but still, ICT could best be manipulated by skilled and educated workforce that form human capital.

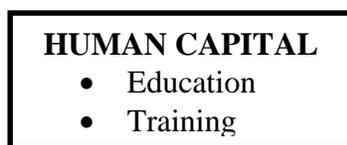
Cognizant of the above studies, it was evident in this study that human capital played a significant role in poverty reduction through enhanced labour productivity and associated incomes. By the scholars like Wei and Ziyin (2006), Dao (2008), Becker (2010), Slaus and Jacobs (2011), Kayode (2012), Ali and Ahmad (2013), and Khan, *et al.* (2016), acknowledging that human capital was crucial in poverty reduction, governments ought to focus on investing and development of human capital for enhanced labour productivity thereby increasing output, disposable incomes and subsequently reducing rural poverty.

## Conceptual Framework

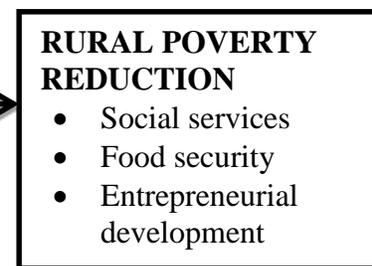
This established the relationship between variables under study being human capital as independent variable (IV) and rural poverty reduction as the dependent variable (DV). Human capital was studied as an independent variable to examine how it could ensure rural poverty reduction. Rural poverty reduction as a dependent variable was studied to establish strategies that could sustainably reduce rural poverty in a bid to improve on the people's welfare as depicted under Figure 2.

## Conceptual Framework

### INDEPENDENT VARIABLE (IV)



### DEPENDENT VARIABLE (DV)



### MODERATING VARIABLE (MV)

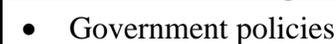
- 
- Government policies

Figure 2: Conceptual Framework

Source: Adapted and Modified from Tilak, 2005

From Figure 2, it was believed that reduction of rural poverty in form of having potential of accessing social services like health services, education, electricity, safe water, housing; and also attain food security, and rural entrepreneurial development as well as being in possession of the purchasing power for the above among others, could be attained when there is appropriate development and utilization of human capital. Human capital could be strategically developed through education and training to enhance on the people's productivity and incomes accruing from increased output or efficient service delivery. Government policies were included as a moderator factor because they play a lot in providing enabling environment.

## METHODOLOGY

The study methodology outlined the methods, approaches and instruments that were used to carry out the study. It covered the research philosophy, research design, population of study, sample size and selection strategies, data sources, data collection methods, instruments and tools, validity and reliability tests, data processing and analysis.

### Research Philosophy

This study followed Pragmatism as the philosophical paradigm. Pragmatism paradigm integrates more than one research approach and strategies within the same study where use of mixed methods like quantitative and qualitative research is emphasised for complementarity in obtaining satisfactory results and it was found satisfactory in obtaining findings

## Research Design

Cross-sectional survey under descriptive research design was used to examine the contribution of human capital towards agricultural transformation for poverty reduction in rural areas. The design was chosen because, data was collected from a sample of a study population at a particular time whose results were then extrapolated to the entire population of study (Amin, 2005). This design was convenient when collecting data from a large population with a small sample (Backstrom and Hursh, 1963 in Ahuja, 2007). Both qualitative and quantitative approaches were used to supplement each other. The qualitative approach was used because opinions of some respondents generated through probing provided an understanding of the real situation and the quantitative approach involving questionnaires were used to obtain views of respondents for the purpose of explaining relationships between the studied variables.

## Study Population

Two hundred eighty one thousand, seven hundred five (281,705) participants as target population in Kisoro district were captured from whom a sample of 400 (four hundred) respondents were selected where their categories included; 134 agricultural farmers (individual household farmers and farmers groups), 133 district local government technical staff and 133 participants from other categories of participants including business entrepreneurs, cottage/ agricultural industrialists, property owners, politicians, religious leaders, and other selected opinion leaders. The study population was the population of Kisoro district as per the National Population and Housing Census 2014, (UBOS, 2017) and was selected for this study because of being affected by poverty.

## Sample Size

Out of a study population of two hundred eighty one thousand, seven hundred five (281,705) participants, a total sample size of four hundred (400) respondents was selected and determined using Slovin formulae (1960).

According to Slovin, sample size is calculated by :- 
$$n = \frac{N}{1+N(e)^2},$$

Where the sample size is represented by - **n**,

Study population is represented by - **N**, and

The confidence level is 95% with 0.05 as a standard error of measurement represented by - **e**

Therefore, the calculation of the sample size was given by:

$$n = \frac{281,705}{1+ 281,705 (0.05)^2}$$

Sample size = 399.43 which was = 400.

Since participants could never have fractions, the researcher rounded them up to 400 respondents.

## **Sampling Techniques**

The researcher used both probability and non- probability sampling techniques.

### **Probability Sampling**

Probability sampling techniques of selecting a sample from categories of the study population were appropriate because they enabled them to have equal chances of participating in the sample besides taking into account the homogeneity and heterogeneity of the study population for elimination of bias (Amin, 2005). Probability sampling technique included, stratified sampling (Table 2).

### **Stratified Sampling**

This is a sampling technique that selects respondents as representatives of sub groups within the study population (Kakooza, 2002, Mugenda and Mugenda, 2003). This technique was applied on farmer groups that were organized and registered at Sub County levels at least with one group selected from a sub county from whom a sample will be randomly selected.

### **Non- probability Sampling Technique**

It included purposive sampling and snowball sampling (SRS) (Table 2).

### **Purposive Sampling**

This is a sampling technique where the researcher uses his judgment to select respondents he believes have the required information basing on their experience and knowledge of the area of this study (Mugenda and Mugenda, 2003). In this case, this technique was applied on selection of technical staff at District and Sub County levels that included heads of departments, Agricultural, fisheries and veterinary officials, Sub County Chiefs/ Town Clerks, Community Development Officers and selected heads of institutions. The other categories where purposive sampling was used was on opinion leaders including; heads of religious institutions and political leaders.

### **Snowball Sampling**

This is a sampling technique where once a key informant has been identified, will name other participants to be contacted by the investigator to participate in the study for him/her to understand some aspects of a situation under study (Amin, 2005). This technique was applied on individual farmers since they were not known by the researcher but the process began with identification of some few farmers using agricultural officials, who in turn led the researcher to other farmers for their views on the studied variables.

The category of respondents, population sample size and their sampling techniques with reasons for choice of sampling techniques were tabulated in the below Table 2.

**Table 2: Population, Sample Size and Sampling Techniques**

Category of respondents	Target Population	Sampled Population	Technique for Population sampling from the target population	Sample Size	Percentage (%)	Sampled categories	Number of sampled respondents	Sampling Technique of sample size	Choice of Sampling Technique
Agricultural farmers	259,745 persons from 57,721 households	241,488 Majorly those in subsistence crop farming from 53,664 households	Category of farmers majorly in subsistence farming as per National Population and housing census (2014)	134	33.5 %	Individual farmers	67	Snow ball	Involved in farming
						Farmer groups	67 respondents from 7 farmer groups	Stratified	Youths, women and mixed groups of rural farmers.
Others: 1. Employment Incomers Others 2. Business entrepreneurs 1. Cottage industrialists 2. Property income owners 3. Family support/ 4. Remittances from abroad 5. Other occupations including opinion leaders	21,960	2,253 (Civil servants)	Civil servants on Kisoro district local government payroll (2018)	133	33.25%	Agricultural, Fisheries and Veterinary officials, Sub County Chiefs/ Town Clerks, Parish Chiefs, Community Development Officers, District heads of department, and selected heads of institutions	133	Purposive	Agricultural Officials and Technical officials with human capital potentials and involved in rural poverty eradication
		230	Random	133	33.25%	Selected district political leaders, heads of religious institutions and NGOs, and Business entrepreneurs, agricultural industrialists, members on committees, boards and commissions	133	Purposive	Involved in rural poverty eradication efforts
<b>TOTAL</b>	<b>281,705</b>	<b>243,971</b>		<b>400</b>	<b>100%</b>		<b>400</b>		

Source: National Population and Housing Census, 2014; Area Specific Profile Report Kisoro (UBOS, 2017), Kisoro District Five- Year Development Plan (2015/2016- 2019/2020).

### Data Sources

There were two sources of data as hereunder.

#### Primary Data

Primary data was collected from farmer groups, individual farmers, Kisoro district technical staff, lower local governments' technical staff and opinion leaders (Selected district political leaders, heads of religious institutions and NGOs, and Business entrepreneurs) using face to face interviews, self-administered questionnaires, focused group discussions and observation.

#### Secondary Data

Secondary data was generated from the reviewed literature materials, books or documents.

#### Data Collection Methods, Instruments and Tools

Both qualitative and quantitative methods of data collection were used since the study was triangulated. The data collection instruments used were those that were compatible with their respective data collection methods.

## Data Collection Methods

The data was collected quantitatively by use of a survey through use of questionnaires on district employees, and also selected business persons and agricultural industrialists; and qualitatively by use of face to face interviews especially on individual farmers and opinion leaders for firsthand information; focus group discussions (FGDs) with selected farmer groups where a group brainstormed on the issues and the researcher made an independent synthesis from the group discussions; participant observation with the researcher gathering data by personally observing the life style and agricultural activities of farmers selected as respondents to ascertain their status and agricultural practices and documentary review of both primary and secondary documents where primary documents were documents which gave a direct description of an occurrence by an individual who observed or witnessed it and included lists of Kisoro District Local Government staff structure and staff deployed in their respective areas/locations, District capacity building plan, lists of beneficiaries under Operation Wealth Creation program (OWC), lists of group beneficiaries under Uganda Women Entrepreneurship program (UWEP), Youth Livelihood program (YLP) and lists of registered farmer groups at District and Sub County levels. On the other hand, secondary documents were authored documents reviewed that included, internet documents and Nkumba University library papers, articles, among others that came at the researcher's disposal and were relevant to the study.

## Data Collection Instruments

Data collection instruments used in data collection included **self – administered questionnaires** set for respondents to respond to by filling during their appropriate time; **interview schedule** with list of program indicating the categories of respondents to be interviewed and at which date and time lag to maintain consistency; **interview guide** with a list questions the researcher intended to pose to the respondents in a systematic way to avoid digressing from the intended objective of answering the research questions as noted by Mugenda and Mugenda, (2003); **focus group discussion guide** with structured questions for respondents to brainstorm about the general perspectives and answers on issues raised against which the researcher concluded on the group findings through a synthesis; **observation checklist** with observable items like agricultural implements, inputs, agricultural field activities and practices; and **observation plan** with time and period to systematically observe the items.

## Data Collection Tools

A *Recorder (Stereo IC Recorder - Sony: ICD- PX470)* was used to record the responses of the respondents during the interview. This complemented the views recorded by the researcher during interviews in a sense that clarity on responses given by respondents was generated from an audio recording thus enriching the study findings. A *Camera (Telephone)* was also used with the permission of the respondents, where the researcher took some snap shots on the observable items/ areas that were vital for the study like agricultural field activities among others.

## Validity and Reliability Tests

### Validity

Validity refers to the appropriateness of the instrument (Amin, 2005). It establishes whether the instrument measures what it is intended to measure. Validity of the research instruments in relation to their accuracy of the respondents' answers was tested to test the validity of the questionnaire. Testing of validity of the questionnaire was through pre-testing it on 10 potential respondents before final study to establish any areas for improvement. In establishing the validity of research instrument by the researcher, face validity, content validity and construct validity were used.

**Face validity** was used because from the face of the instrument being a questionnaire on the variables being measured, the researcher was able to obtain answers from the respondents especially in areas least known by him like human capital endowments by respondents.

**Content validity** was also be used to establish the extent to which the content of the research instrument corresponded to the theoretical concepts of human capital and rural poverty it intended to measure. The content validity of the instrument was measured using the Content Validity Index (CVI) to establish the Coefficient whose formula was:-

$$\text{Content Validity Index (CVI)} = \frac{\text{Number of declared valid/ relevant items}}{\text{Total number of items}}$$

It was notable that for the instrument to be taken as valid, its coefficient of validity index ought to be 0.7 or above (Amin, 2005). Since the number of declared valid items were 38 against the total number of items being 39 then the coefficient of validity index was 0.9 which implied that the instrument was valid.

Finally, **construct validity** was used to ascertain whether the tool was in consonance with the theoretically derived hypotheses among the research variables, the researcher intended to measure. The data from the respondents were factor analysed to determine the correlation among the items (indicators) of the constructs for their validity.

### Reliability

Mugenda and Mugenda (2003), referred reliability to a measure of the degree to which a research instrument yielded consistent results or data after repeated trials. Reliability of the research instruments to ascertain their consistency on the respondents' answers was tested using test- retest reliability/ stability reliability and internal consistency using Cronbach's coefficient alpha test (Amin, 2005). Test- retest reliability was used because it provided evidence that the scores obtained in the first test were the same when the respondents were retested using the same test.

On the other hand internal consistency using Cronbach's coefficient alpha test was also used in testing the reliability of the research instrument. Kakooza (2002), noted that if the correlation coefficient is high with scores of 0.5 or above, then it implies that the instrument is reliable. The internal consistency reliability of the instrument was measured using SPSS software where its correlation coefficient was established to be 0.955 which was high and with each of the individual dimension having a coefficient alpha of more than 0.8 which depicted that the instrument was reliable as tabulated hereunder.

**Table3: Reliability Coefficient**

<b>Dimension</b>	<b>Reliability coefficient/ Cronbach's Alpha</b>	<b>Number of items</b>
Education and rural poverty reduction	0.857	15
Training and rural poverty reduction	0.883	11
Rural poverty reduction	0.849	13
<b>OVERALL/ TOTAL</b>	<b>0.955</b>	<b>39</b>

### **Data Processing and Analysis**

To obtain meaningful information about the research problem, the collected data was processed and analyzed both quantitatively and qualitatively. Quantitative data processing and analysis involved examining the collected data from questionnaires for errors or omissions, coding and computing it using statistical package for social scientists (SPSS) software for meaningful information where the relationships between human capital and its dimensions, with rural poverty were determined. The package was used because it had a wide range of analysis tools from where descriptive statistics (frequency tables and descriptive analysis to determine the percentages of responses in relation to the relationship between all the studied variables), Pearson product-moment correlation coefficient to determine the strength of association and direction of relationships and regression analysis to explain the extent to which the studied variable being human capital as an independent variable with its aspects influenced and/ or caused variations in rural poverty reduction as a dependent variable. All were used in analyzing the collected data.

Pertaining qualitative data processing and analysis, it involved search for patterns of data, their description and interpretation for meanings. The qualitative data had been obtained through interviews and focused group discussions, and was processed manually through data checking, editing, hand coding on a coding sheet according to the themes developed using the objectives of the study (Amin, 2005 and Mugenda and Mugenda, 2003). It is from this that, the voices of both the respondents and the researcher were established.

### **FINDINGS**

#### **Education and Rural Poverty Reduction in Kisoro District**

This study was set to examine how human capital would contribute to poverty reduction in rural areas with a view of developing strategies and recommendations that enhance poverty reduction in Kisoro District. The first objective specifically was establishing how education could ensure rural poverty reduction in Kisoro District is addressed.

#### **Response Rate**

The findings in Table 4 depict the size of the respondents who were targeted, the size of the study participants and the response rates.

**Table 4: Target Responses and Response Rate**

Target Responses	Number of Responses		Response Rate
<b>400</b>	Survey	287	71.8%
	Interviews/ Focus Group discussions	104	26%
	<b>TOTAL</b>	<b>391</b>	<b>97.8%</b>

Table 4 shows that a total of 400 of individuals were targeted. During the study however a total of 391 were able to participate in the study where 287 participated in the Survey representing 71.8% and 104 participated in interviews and focus group discussions representing 26% such that the overall response rate was 97.8%. This response rate was considered sufficient to address the originally set research questions.

### Biographic Characteristics in the Survey

The study prior to addressing the objective with regard to how education could ensure rural poverty reduction in Kisoro district, first established the biographic characteristics of the study participants. The biographic characteristics established included the age in years, marital status, highest academic attainment, occupation, time spent in agricultural related activities and the monthly income in Uganda shillings. The study results with regard to the biographic characteristics were as presented in Table 5.

**Table 5: Biographic Characteristics of the Study Participants in the Survey That Were Involved in Agricultural Related Activities**

Biographic Characteristic		Frequency (N = 287)	Percentage (%)
Gender	Male	261	90.9
	Female	26	9.1
Age in Years	<30	4	1.4
	30-39	90	31.4
	40-49	117	40.8
	50-59	76	26.5
Marital Status	Single	4	1.4
	Married	270	94.1
	Widow/Widower	4	1.4
	Divorced	9	3.1
Highest Academic Attainment	Primary	14	4.9
	Secondary	6	2.1
	Tertiary	267	93.0
Occupation	District technical staff	224	78.0
	Business Person	41	14.3
	Agricultural Industrialist	3	1.1
	Agricultural/ Veterinary Officer	19	6.6
Time spent in Agricultural related activities	1-5 years	37	12.9
	6-10 years	39	13.6
	more than 10 years	211	73.5
Monthly Income	<100,000	17	5.9
	100,000-<500000	76	26.5
	500,000- <1million	114	39.7
	1 million and above	80	27.9

Source: Primary Data (2020)

In this study, a total of 287 individuals participated in the survey of examining how human capital would ensure rural poverty reduction. The results about the biographic characteristics demonstrate a high level of representative as the varied responses that characterize the different biographic categories are all represented.

However, under qualitative data collection, views from 104 participants on study variables were obtained through interviews and focus group discussions (FGDs) which complimented the findings from the Survey. The Interviews were conducted on 40 participants who included individual farmers and opinion leaders while focus group discussions were conducted with 64 participants from seven farmer groups.

### State of Rural Poverty Reduction in Kisoro District

In investigating how education could ensure rural poverty reduction in Kisoro district as per the conceptual framework in Figure 2, rural poverty reduction forms the dependent variable. As in Table 6, the aspects of rural poverty reduction studied included social services accessibility and housing, food security alongside entrepreneurial activity.

**Table 6: Descriptive Results on the State of Rural Poverty Reduction in Kisoro District**

Rural Poverty Reduction	Mean	Std. Deviation	Interpretation
<b>Social Services Accessibility and Housing</b>			
People in this community have easy access to medical services	3.84	1.00	
People in this community can now afford medical services	3.09	1.07	
There are government subsidies in education that continue to enable learners to attend and complete schools of their choice	3.05	1.25	
The school education system is now affordable for the learners of this community	3.15	1.23	
Students in this community are able to join schools of their choice once they qualify for them	2.38	1.29	
The costs on electricity connection and consumed units are affordable by people of this community	2.03	1.05	
There is easy access to safe and clean water among community members	3.02	1.25	
Rural people of this community can now afford habitable houses	3.20	1.09	
<b>Sub- Mean &amp; Standard Deviation</b>	<b>2.97</b>	<b>1.15</b>	<b>Moderate</b>
<b>Food Security</b>			
People of this community can now afford having at least two meals each day	3.56	1.13	
The members of this community have access to adequate food according to their preferences	2.43	1.13	
Community members have access to nutritious food that meet recommended healthy dietary requirements	2.24	1.09	
<b>Sub-Mean &amp; Standard Deviation</b>	<b>2.74</b>	<b>1.12</b>	<b>Moderate</b>
<b>Entrepreneurial Activity</b>			
Rural people are actively involved in enterprises that generate income to them	2.94	1.11	
There is growth of enterprises set up by rural people in this community	3.08	1.11	
<b>Sub- Mean &amp; Standard Deviation</b>	<b>3.01</b>	<b>1.11</b>	<b>Moderate</b>
<b>Pooled Mean &amp; Standard Deviation</b>	<b>2.92</b>	<b>1.14</b>	<b>Moderate</b>

Scale: 4.20-5.00 Very High, 3.40-4.19 High, 2.60-3.39 Average, 1.80-2.59 Low, 1.00-1.79 Very Low

Source: Primary Data (2020)

The study findings revealed that there were moderate rural poverty reduction levels in Kisoro district ( $Mean = 2.92$ ,  $SD = 1.14$ ). Poverty eradication efforts were essential in the development of the district and needed to be maintained high.

### **Social Services Accessibility and Housing**

The accessibility of social services and housing were moderate in Kisoro district ( $Mean = 2.97$ ). The accessibility of social services and housing were crucial indicators of household welfare and needed to be improved. The results indicated that the community highly accessed medical services. The study findings further revealed that most community members in Kisoro district moderately accessed safe and clean water, afford habitable houses, medical services, the school education system and receive subsidies in education that continue to enable learners to attending school. Access to these services and affordability of these social services needed to be improved as they were important in the community members lives. The findings corroborated with the National population and housing census (2014), which established that in Kisoro district, access to safe (piped) water stood at 33.7 percent of the population, electricity at 7.6 percent while households that lived in semi- permanent dwelling units, an indicator that a lot needed to be done to improve on social services accessibility and housing conditions that would arise from economically empowered population.

The views of the respondents during the interviews revealed that the state of poverty in Kisoro district was alarming due to its deprivation in the region in terms of being hard to reach, poor road network marked with their poor state, un fertile lands in some areas, some areas had no access to safe water or no water at all especially in hilly areas other than depending on seasonal rain water or walking long distances for water yet the water was important for domestic use, production and domestic animals. Accessibility to medical services was also a challenge as people could walk long distances to reach hospitals with others resorting to use of local herbs to treat people which was dangerous. Internet connectivity in some areas was also a challenge.

However, the study results indicated a low ability for community members to afford the costs of electricity connection and pay for the electricity units, and also few students were able to join schools of their choice once they qualified for them. In agreement during the FGDs, notably, all respondents mentioned that rural electrification programmes were progressing, but slowly possibly due to affordability.

The above statements gave an indication that the state of poverty reduction was still moderate and required a number of interventions in order to reach high levels.

### **Food Security**

The study findings indicated that there were moderate levels of food security among community members in Kisoro district ( $Mean = 2.97$ ). Food security is essential for the growth and health of people, thus need to be improved to high levels if malnutrition is to be minimized.

The study results showed a moderate number of people who were in position to afford having at least two meals each day. Having at least two meals in a day is critical for human health as it minimizes chances of getting malnutrition related diseases. The findings are not any far different from the study findings by Spring (2016), which established that only 9.7 percent of population in

Kisoro district were food secure which corroborated the findings of the National population and housing census (2014) that 11.4 percent of households of 5 years and above had two meals a day. The views expressed during the interviews indicated that a good number of community members could access food for themselves since at least they grew enough food crops like bananas, Irish potatoes, maize and others which could provide enough food for the family in terms of lunch and supper.

However, the study findings revealed that the few community members had access to adequate food of their preferences and to nutritious food that met recommended healthy dietary requirements. Failure to access food of their own choice could lead to low consumption of food as the appetite for the food available could also be low. In addition to failure to have food that met recommended healthy dietary requirements, it could also lead to nutritional related diseases in humans in the community.

### **Entrepreneurial Activity**

The level of entrepreneurial activity was also found to be moderate ( $Mean = 3.01$ ). Moderate levels of entrepreneurial activity indicated average levels of business enterprises which acted as socio-economic drivers of development in the community. The study findings showed that moderate number of community members actively involved in enterprises that generated income to them and that there was a moderate growth of enterprises set up by rural people in this community.

The views of the respondents during the interviews also revealed that some people had embarked on some entrepreneurial activities for their income either because they had no alternative work or it was a better option as compared to farming, charcoal burning among others while others did business with other tasks like farming. This confirmed that much as not many community members had started some entrepreneurial activities, at least some people were carrying on with their businesses.

### **Education among Individuals in Kisoro District**

This study as noted earlier was set to establish how education could ensure rural poverty reduction in Kisoro District. As portrayed in the conceptual framework in Figure 2, education forms one of the sub indicators of the independent variable in this case human capital. The study results regarding education were as presented in Table 7.

**Table7: Descriptive Results about the Level of Education in Kisoro District**

Education	Mean	Std. Deviation
<b>Social Services</b>		
Communities are enlightened to utilize better and access social services like health care, water and sanitation services and schools which enhance on their health, longevity, literacy levels, and productivity with their resultant higher financial gains	3.74	1.07
Communities are aware of the importance of family planning and delayed marriages which lead to improved quality of life	3.29	1.15
There are educated people within my community who could have higher opportunities for better paying jobs resulting into their improved standard of living	3.80	1.01
There are investments in my community initiated by educated people which provide financial returns and employment to the people thereby improving on welfare	3.00	1.19
Communities are mobilized and given technical guidance on development initiatives for enhancing people's productivity for financial gains and accessibility of social services.	3.19	1.22
<b>Mean &amp; Standard Deviation</b>	<b>3.40</b>	<b>1.13</b>
<b>Food Security</b>		
There are new production technologies being adopted within my community for increased food production and supply	3.12	1.33
There are technological innovations in my community for new and better quality food products which improves on the quality of life	2.76	1.21
Food production has increased in the community due to market from educated income earners which further enhances on food production	2.93	1.34
My community has been provided with professional advisory services for enhancing food production and associated financial gains	3.29	1.24
My community has been enlightened on the right nutritional requirements for improved health and quality of life	3.03	1.22
<b>Mean &amp; Standard Deviation</b>	<b>3.03</b>	<b>1.27</b>
<b>Entrepreneurial Development</b>		
There is technical and technological knowhow from educated people within my community which have enhanced on production capacity and good quality outputs	2.60	1.15
There is skilled manpower in my community for business development and enhanced output	2.56	1.28
People in my community have adopted entrepreneurship skills for business development	2.63	1.22
Customer care has increased among entrepreneurs within my community thereby enhancing sales and business growth	2.89	1.15
There are educated income earners within my community who have provided market for produce thereby enhancing on production and business growth	2.90	1.21
<b>Mean &amp; Standard Deviation</b>	<b>2.72</b>	<b>1.20</b>
<b>Agricultural Education</b>		
Farmers have been taught about agriculture and its related activities in a classroom setting	2.52	1.25
Farmers have learnt a diversity of agricultural related activities through my experiences in life	3.10	1.28
Farmers are well equipped with knowledge on the key fundamentals in agriculture right from my family or parents	2.87	1.18
The community has been equipped with knowledge about appropriate methods used in agriculture	3.15	1.23
Farmers possess knowledge about pests and diseases that are a danger in agriculture	3.38	1.19
Farmers have had one-on-one sessions tutoring them about the different practices in agriculture	2.60	1.25
Farmers have had opportunities attending agricultural courses organized for farmer groups in our community	2.85	1.22
<b>Mean &amp; Standard Deviation</b>	<b>2.92</b>	<b>1.23</b>
<b>Pooled Mean &amp; Standard Deviation</b>	<b>3.01</b>	<b>1.21</b>

Scale: 4.20-5.00 Very High, 3.40-4.19 High, 2.60-3.39 Average, 1.80-2.59 Low, 1.00-1.79 Very Low

Source: Primary Data (2020)

### **Social Services Education**

Table 7, results show a high level of social services related education demonstrated amongst the people involved in agricultural related activities within Kisoro district (Mean = 3.40, SD = 1.13). Results particularly show that the communities are highly enlightened on how to utilize better and access social services like health care, water and sanitation services and schools which enhance on their health, longevity, literacy levels, and productivity with their resultant higher financial gains. In the same way the people in agricultural related activities were highly educated that they could have higher opportunities for better paying jobs resulting into their improved standard of living. Moderate levels of social services related education was however demonstrated with regard to awareness on the importance of family planning and delayed marriages and moderate levels of investments being initiated by educated people which provide financial returns and employment to the people thereby improving on welfare. A similar trend was shown in that, the communities were fairly mobilized and given technical guidance on development initiatives for enhancing people's productivity for financial gains and accessibility of social services.

Out of Focus Group Discussion and Interviews conducted from participants, majority of respondents echoed lack of education on how to utilize and access social services, family planning awareness by men, schools being farther apart requiring many children to walk long distances or pay for transportation and to lose valuable time in walking that could otherwise be spent helping at home which discouraged many children from attending school, lack of financial support like school fees for students in Universal Primary Education schools due to charges per child which rendered them to drop out and also insufficient water for domestic use and for animals to drink.

### **Food Security Education**

The study though with high variations also found moderate level of education regarding food security amongst the individuals (Mean = 3.03, SD = 1.27). The moderate levels of education on food security aspects were reported in relation to new production technologies being adopted within the community for increased food production and supply and also in relation to technological innovations for new and better quality food products which improves on the quality of life. The study results also showed that the communities had been provided with professional advisory services for enhancing food production and associated financial gains, enlightened on the right nutritional requirements for improved health and quality of life. The levels of food production had fairly increased in the community due to market from educated income earners which further enhanced on food production.

The Interviews and Focus Group Discussions corroborated the findings from the survey. The respondents noted that most of them have failed to increase on their productivity because most of them performed various operations manually, starting from land preparation, ploughing, planting, harvesting and storage. No machines were employed to perform these operations. Under such situations, they had limited capacity to expand their farms and hence continued to produce only for subsistence and had remained food insecure. More so, they were not educated about the importance of application of farm inputs and their utilization, especially chemical fertilizer and chemical pesticides in order to increase food crops production as well as preservation of stored food for a long time. The respondents also stressed lack of balanced diet on their daily menu due

to poverty besides having less than two meals or none per day, awareness on control of pests and diseases also affected crop growing and food storage in addition to lack of appropriate and proper farming techniques such as proper spacing, plant density, and fertilizing and weed control which had caused food insecurity due to low productivity.

It is evident from the interviews that there was some food insecurity in the communities which is in tandem with the findings from SPRING (2016) that only 9.7 percent of people in Kisoro district were food secure and that 11.4 percent of households with children of five years and above had two meals a day as the National Population and Housing Census (2014).

### **Entrepreneurial Development Education**

Moderate levels though with variations in relation to entrepreneurial development related education were equally demonstrated amongst the individuals involved in agricultural related activities in Kisoro district (Mean = 2.72, SD = 1.20). The respondent individuals demonstrated fair average levels of technical and technological knowhow geared towards enhancing production capacity and good quality outputs, fair levels of skilled manpower community for business development and enhanced output and fair levels of entrepreneurship skills adopted for business development. The farmers also demonstrated fair customer care knowledge in addition to fair levels of market knowledge for produce towards enhanced sales and business growth.

Arising from the Interviews and Focus Group Discussions, this is what some respondents said below in response to the questions for this study raised to them on entrepreneurial development.

The views obtained from interviews and focus group discussions collaboratively with the survey findings established that; agricultural production capacity, good quality outputs, entrepreneurial skills had not advanced due to rare trainings from district technical staff for backstopping. More so, creative and innovative people were not being mobilized for innovations besides having fewer educated income earners to provide markets for produce/ products in the communities. The above responses were an evidence that the level of entrepreneurial development was still low and more efforts were needed to awaken the communities in this area.

### **Agricultural Education**

The study findings with regard to agricultural education as a human capital aspect showed average or fair levels amongst the individuals in the agricultural related activities (Mean = 2.92, SD = 1.23). The standard deviation being higher than 0.5 indicated a very great level of variation in the levels of agricultural education demonstrated across individuals such that some groups had more than average levels compared to others who had less than average. The average levels of agricultural education demonstrated were reflected by the fact that farmers had been taught about agriculture and its related activities in a classroom setting in addition to learning a diversity of agricultural related activities through their experiences in life.

As in Table 7 the farmers were found to be well equipped with knowledge on the key fundamentals in agriculture right from their family members or parents, the community was fairly equipped with knowledge about appropriate methods used in agriculture and possessed average knowledge about pests and diseases that were a danger in agriculture. The findings in addition showed that the farmers had fairly had one-on-one sessions tutoring them about the different practices in

agriculture moreover with fair levels of opportunities attending agricultural courses organized for farmer groups in the community. The findings corroborated with the study findings by Barungi, *et al.*, (2016) which established the existence low application of management practices in Uganda for enhanced productivity like application of herbicides and pesticides that could lead to high yields. This therefore necessitated agricultural education of farmers as Godoy and Dewbre (2010), noted that agricultural education was a form of investment that would enhance agricultural productivity.

Qualitatively, from the Interviews and Focus Group Discussions conducted, it was established that there were inadequate farmer trainings from technical staff. Farmers mostly relied on their own traditional farming knowledge and practices.

On the overall, the farmers demonstrated moderate levels of Agricultural Education in Kisoro district which however varied across the responding individuals with some demonstrating high levels as opposed to others who demonstrated low levels (Mean = 3.01, SD = 1.21). This result demonstrated need for development experts within the agricultural sector to come up with evidence based informed integrative initiatives which could minimize disparities in agricultural education levels inherent of the individuals involved in agricultural related activities.

### Correlational Findings between Level of Education and Extent of Rural Poverty Reduction in Kisoro District

To establish whether there was a relationship between the level of agricultural education and extent of rural poverty reduction in Kisoro district, the researcher carried out correlation analysis. The results were as given in Table 8.

**Table 8: Pearson Correlational Findings between Education and Extent of Rural Poverty Reduction**

		Correlations				
		Poverty_Redn	Social_Serv_Educ	Food_security_Educ	Entre_Devt_Educ	Agric_Educ
Poverty_Redn	Pearson Correlation	1	.443**	.243**	.416**	.263**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	287	287	287	287	287
Social_Serv_Educ	Pearson Correlation	.443**	1	.589**	.562**	.504**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	287	287	287	287	287
Food_security_Educ	Pearson Correlation	.243**	.589**	1	.495**	.561**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	287	287	287	287	287
Entre_Devt_Educ	Pearson Correlation	.416**	.562**	.495**	1	.478**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	287	287	287	287	287
Agric_Educ	Pearson Correlation	.263**	.504**	.561**	.478**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	287	287	287	287	287

\*\**. Correlation is significant at the 0.05 level (2-tailed).*

The results in Table 8 suggest that all the aspects of education namely; social services ( $r = 0.443$ ,  $p < 0.05$ ), food security ( $r = 0.243$ ,  $p < 0.05$ ), entrepreneurial development ( $r = 0.416$ ,  $p < 0.05$ ), and agricultural education ( $r = 0.263$ ,  $p < 0.05$ ) had a positive and significant relationship with poverty reduction.

### Multivariable results for the effect of Education on rural poverty reduction in Kisoro district

This study as a way of confirming the relationship, established whether education had significant effect on rural poverty reduction in Kisoro district. This was attained through conducting a regression analysis and the results were as in Table 9.

**Table 9: Regression Model Results for the Effect of Education on Rural Poverty Reduction in Kisoro District**

Education				95.0% CI	
	Coefficient	S.E	Sig.	Lower	Upper
(Constant)	1.319	.195	.000	.936	1.703
Social_Serv_Educ	.367	.075	.000	.219	.514
Food_security_Educ	-.074	.051	.148	-.175	.027
Entre_Devt_Educ	.195	.049	.000	.098	.291
Agric_Educ	.017	.021	7.54	-.091	.126
R	= .493				
R <sup>2</sup>	= .243				
Adj R <sup>2</sup>	= .232				
F <sub>(4,282)</sub>	= 22.593				
P-Value	= 0.000				

*a. Dependent Variable: Poverty\_Redn*

The results in Table 9 showed that education aspects namely; social services, food security and entrepreneurial development explained only 23.2% of the contribution on poverty reduction (adjusted R<sup>2</sup> = 0.232). This means that 76.8% of the variation in poverty reduction was accounted for by other factors not considered under this model. The study however found social services education ( $\beta = 0.367, p = 0.000$ ) and entrepreneurial development education ( $\beta = 0.195, p = 0.000$ ) having a positive and significant influence on poverty reduction.

On the other hand, food security education had a negative as well as insignificant influence on poverty reduction ( $\beta = -0.074, p = 0.148$ ). The magnitudes of the respective coefficients suggested that social services education had the most significant influence on poverty reduction followed by entrepreneurial development education. Efforts that aim at reducing rural poverty needed to embrace social services and entrepreneurial development education in their strategies.

### Training and Rural Poverty Reduction in Kisoro District

This study was also set to also explore the effect of training on rural poverty reduction in Kisoro district where both the descriptive and inferential results were provided as hereunder.

**Table5 10: Descriptive Results on the Level of Training in Kisoro District**

<b>Training</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Social Services Training</b>		
My community has been technically trained on know-how to improve on productivity, output quality and incomes for access to social services	2.82	1.30
People in community have had skills training for development of work competencies to improve on quantity, quality, and incomes for access to social services	2.53	1.15
My community has been trained in soft skills like communication skills, ethics, problem solving, emotional intelligence to better access social services	2.43	1.23
<b>Sub- Mean &amp; Standard Deviation</b>	<b>2.59</b>	<b>1.23</b>
<b>Food Security Training</b>		
The people in my community have been technically trained and equipped with skills and know-how for enhancing productivity, output, quality, and food security	2.74	1.25
People in my community have been trained on occupational safety and disaster planning which has enhanced on production of food	2.39	1.11
Community members have been trained on newly introduced products of crop/animal varieties and disease control herbicides which has increased on productivity and food security	2.96	1.27
Trainings on better farming practices have been provided to people in my community which has acquainted them with skills for enhancing productivity of food for attainment of food security	3.12	1.23
<b>Sub- Mean &amp; Standard Deviation</b>	<b>2.80</b>	<b>1.22</b>
<b>Entrepreneurial Training</b>		
People in my community have been trained in soft skills like communication skills, ethics, problem solving, customer care, emotional intelligence, and business development for increased incomes which would lead to entrepreneurial development	2.29	1.10
Business community have been trained in business skills aimed at improving sales and incomes for entrepreneurial development	2.38	1.13
People in my community have been trained on team work (team building) to enable them share market information which enhances entrepreneurial development	2.57	1.15
Business community have received managerial training for better organization and enhanced performance for entrepreneurial development	2.30	1.06
<b>Sub- Mean &amp; Standard Deviation</b>	<b>2.39</b>	<b>1.11</b>
<b>Agricultural Training</b>		
Farmers are well oriented about the appropriate farming practices used on the farm	2.91	1.16
Farmers have received training on best agricultural practices through demonstrations by experienced agricultural experts	2.90	1.27
Farmers have received training on appropriate agricultural practices through demonstrations by experienced farmers	3.07	1.27
Farmers have had agricultural trainings from other agricultural farms other than the farm they operate normally	2.77	1.24
Farmers have received training on agricultural related occupational safety especially with regard to pesticides used in agriculture	2.78	1.19
Farmers have received training on planning for disasters that are related to agricultural activities	2.69	1.14
Farmers are well trained on the methods of harvesting their agricultural produce	2.87	1.23
<b>Sub- Mean &amp; Standard Deviation</b>	<b>2.86</b>	<b>1.21</b>
<b>Pooled Mean &amp; Standard Deviation</b>	<b>2.70</b>	<b>1.19</b>

Scale: 4.20-5.00 Very High, 3.40-4.19 High, 2.60-3.39 Average, 1.80-2.59 Low, 1.00-1.79 Very Low

Source: Primary Data (2020)

The study findings indicated that there was a moderate level of training in Kisoro district ( $Mean = 2.70$ ,  $SD = 1.19$ ). Increasing the level of training was important in improving production given the decreasing levels especially in agricultural production brought about by various factors.

### **Social Services Training**

The study results indicated low levels of social services training among the communities in Kisoro district (*Mean* = 2.59). Low training in social services could contribute to low access and utilization of social services like education, medical services, and water. The study findings revealed that the communities had received moderate technical training and also low skills training on how to improve on productivity, output quality and incomes for access to social services. This left the community with little chances of knowing how to improve on know-how to improve on productivity, output quality and incomes for access to social services which negatively affected their well-being. It was also established that there was low training in soft skills like communication skills, ethics, emotional intelligence for better access to social services.

The findings from both the interviews and focus group discussions indicated that training of the community members in social services like family planning, utilization of medical services; access to education services by children, water access; food security; entrepreneurship; and agriculture was still at moderate levels.

### **Food Security Training**

The study results indicated that there was a moderate level of food security training among communities in Kisoro district (*Mean* = 2.80). Training in food security was crucial in improving food accessibility, food availability, and dietary requirements among people for good health.

Study findings showed that the people in the community had received moderate technical training and less equipped with skills and know-how for enhancing productivity, output, quality, and food security. The findings also showed that community members had been moderately trained on newly introduced products of crop/animal varieties and disease control herbicides and also low level of trainings on better farming practices had been provided to people in my community which had limited them to acquire skills for enhancing productivity of food for attainment of food security. However, the study findings revealed that few community members had been trained on occupational safety and disaster planning which had had a negative impact on production of food.

The findings from the interviewees and focus group discussion participants indicated limited training in food security in areas of land preparation, ploughing, planting, proper spacing, plant density, weed control, application of fertilisers, harvesting and storage and without machines are employed to perform these operations thereby impacting on their productivity. They indicated that they mostly relied on their traditional knowledge and skills or acquired them from their fellow farmers who had some bit of knowledge. This implied that there was low level of training among the community members in food security in Kisoro district.

### **Entrepreneurial Training**

The study findings revealed that community members had received low level of entrepreneurial training (*Mean* = 2.39). Low level of entrepreneurial training is associated with low level business enterprises being set up by the community members which further increase poverty. The results showed that the communities had received low training in areas of business skills, team work, and better organization and enhanced performance.

The findings from the interviewees and focus group discussion participants indicated limited training in entrepreneurship like teaching them about self-empowerment in farming or just any other business, building a poultry house, or pig sties, or a place where youths could learn carpentry, or brick-laying, or bee-keeping and carpentry projects. This was clear indication that entrepreneurship training was key in economic development as most study participants indicated the desire to be trained in entrepreneurship to boost their skills in various businesses.

### Agricultural Training

The study findings indicated that there was a moderate level of agricultural training among community members in Kisoro district (Mean = 2.86). Agricultural training is an important determinant of agricultural production in that it enhances farming skills among farmers. The study results in table 10, indicated all the aspects of agricultural training were at moderate levels. Similar findings are found in the study by Barungi *et al.*, (2016) where it was established that most farmers in Uganda had not adopted better agronomic management practices, soil fertility management practices, post-harvest handling and marketing practices which rendered them have low productivity thus recommended for their training by extension workers in those areas.

The views expressed during interviews and focus group discussions indicated that there was limited training of community members in agriculture with either limited or no trainings like on-the-farm, field demonstrations, on how best to practice farming as the agricultural extension workers were unavailable to the people since they were based at sub counties and not everybody could get there. This necessitated the need for more training in agriculture among community members in Kisoro district.

### Correlational Findings between Training in Agricultural Related Activities and Extent of Rural Poverty Reduction in Kisoro District

Pearson correlation was carried out to find out whether there is a relationship between agricultural training and extent of rural poverty reduction in Kisoro district. The results are as presented in table 11.

**Table 11: Pearson Correlational Findings between Training in and Extent of Rural Poverty Reduction**

Correlations		Poverty_Redn	Social_serv_Train	Food_secu_Train	Entre_Devt_Train	Agric_Train
Poverty_Redn	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	287				
Social_serv_Train	Pearson Correlation	.202**	1			
	Sig. (2-tailed)	.001				
	N	287	287			
Food_secu_Train	Pearson Correlation	.153**	.590**	1		
	Sig. (2-tailed)	.009	.000			
	N	287	287	287		
Entre_Devt_Train	Pearson Correlation	.252**	.639**	.535**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	287	287	287	287	
Agric_Train	Pearson Correlation	.272**	.506**	.646**	.443**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	287	287	287	287	287

\*\* Correlation is significant at the 0.01 level (2-tailed).

The results in Table 11, showed all aspects of training namely; social services training ( $r = 0.202$ ,  $p < 0.05$ ), food security training ( $r = 0.153$ ,  $p < 0.05$ ), entrepreneurial development training ( $r = 0.252$ ,  $p < 0.05$ ), and agricultural training ( $r = 0.272$ ,  $p < 0.05$ ) had a positive and significant relationship with poverty reduction. This result demonstrated that improvements in social services training, food security training, entrepreneurial development training and agricultural training were followed by improvements in poverty reduction amongst individuals involved in agricultural related activities in Kisoro district.

### Multivariable Results for the Effect of Training on Rural Poverty Reduction in Kisoro District

To find out the effect, a regression analysis was carried out to establish whether training influenced rural poverty reduction in Kisoro district. The results were as in Table 12.

**Table 12: Regression Model Results for the Effect of Training on Rural Poverty Reduction in Kisoro District**

Training				95.0% CI	
	Coefficient	S.E	Sig.	Lower	Upper
(Constant)	2.256	.140	.000	1.981	2.531
Social_serv_Train	.018	.054	.742	-.089	.125
Food_secu_Train	-.095	.059	.108	-.212	.021
Entre_Devt_Train	.146	.058	.012	.032	.260
Agric_Train	.189	.055	.001	.081	.297
R	= .322				
R <sup>2</sup>	= .104				
Adj R <sup>2</sup>	= .091				
F <sub>(4,282)</sub>	= 8.182				
P-Value	= 0.000				

#### a. Dependent Variable: Poverty\_Redn

The results in Table 12, showed that training aspects namely; social services, food security, entrepreneurial development and agricultural training explained only 9.1% of the contribution on poverty reduction (adjusted  $R^2 = 0.091$ ). However, only two aspects of training namely; entrepreneurial development ( $\beta = 0.146$ ,  $p = 0.012$ ) and agricultural training ( $\beta = 0.189$ ,  $p = 0.001$ ) had a positive and significant influence on poverty reduction.

On the other hand, social services training ( $\beta = 0.018$ ,  $p = 0.742$ ) had a positive but insignificant influence while food security training had a negative as well as insignificant influence on poverty reduction ( $\beta = -0.095$ ,  $p = 0.108$ ). The magnitudes of the respective coefficients suggested that agricultural training had the most significant influence on poverty reduction followed by entrepreneurial development training. Efforts aimed at reducing rural poverty needed to embrace social services, entrepreneurial development and agricultural trainings in their strategies.

## Human Capital and Rural Poverty Reduction in Kisoro District

This study was also set to determine the relationship between human capital and rural poverty reduction in Kisoro district with study results presented, analyzed and discussed both at descriptive and inferential levels as hereunder.

### State of Human Capital in Kisoro District

**Table 13: Descriptive Results on the State of Human Capital in Kisoro District**

Human Capital	Mean	Std. Deviation
Education	3.01	1.21
Training	2.70	1.19
<b>Pooled Mean &amp; Standard Deviation</b>	<b>2.86</b>	<b>1.20</b>

Scale: 4.20-5.00 Very High, 3.40-4.19 High, 2.60-3.39 Average, 1.80-2.59 Low, 1.00-1.79 Very Low

Source: Primary Data (2020)

The study results in table 13, indicated that there was a moderate level of human capital in Kisoro district ( $Mean = 2.86$ ,  $SD = 1.20$ ). Human capital is necessary for improved production in all economic activities and thus need to be at higher levels to achieve high levels of economic production than the prevailing. Related findings by National Population and Housing Census (2014) area specific profile for Kisoro district showed that the human capital stock was evidently low with 40 percent of population aged 18 years and above being illiterate.

### Correlational findings between human capital and rural poverty reduction in Kisoro district

At inferential level, a correlational analysis was conducted to establish whether human capital was related to rural poverty reduction within Kisoro district with results presented in Table 14.

**Table 14: Pearson Correlational Findings between Human Capital and Rural Poverty Reduction**

Correlations				
		Poverty_Redn	Education	Training
<b>Poverty_Redn</b>	Pearson Correlation	1	.415**	.267**
	Sig. (2-tailed)		.000	.000
	N	287	287	287
<b>Education</b>	Pearson Correlation	.415**	1	.773**
	Sig. (2-tailed)	.000		.000
	N	287	287	287
<b>Training</b>	Pearson Correlation	.267**	.773**	1
	Sig. (2-tailed)	.000	.000	
	N	287	287	287

**\*\*.** Correlation is significant at the 0.01 level (2-tailed).

The study results showed that both aspects of human capital, namely education ( $r = 0.415, p < 0.05$ ) and training ( $r = 0.267, p < 0.05$ ) had a positive and significant relationship with poverty reduction. This result demonstrated that improvements in education alongside training efforts were followed by improvements in poverty reduction in Kisoro district.

### Multivariable Results for the Effect of Human Capital on Rural Poverty Reduction in Kisoro District

In an effort to investigate the effect of human capital on poverty reduction in Kisoro district at inferential level, a multiple regression model was fitted. The results were presented in Table 15.

**Table 15: Regression Results for the Effect of Human Capital on Rural Poverty Reduction in Kisoro District**

Human capital					95.0% CI	
		Coefficient	S.E	Sig.	Lower	Upper
(Constant)		1.634	.170	0.000	1.300	1.969
Education		.531	.087	0.000	.360	.701
Training		-.118	.075	0.116	-.264	.029
R	= .424					
R <sup>2</sup>	= .180					
Adj R <sup>2</sup>	= .174					
F <sub>(2,184)</sub>	= 31.117					
P-Value	= 0.000					

a. Dependent Variable: Poverty\_Redn

The study findings in Table 15 above showed that human capital only contributed 17.4% to rural poverty reduction in Kisoro district. The study results showed that only education had a significant and positive effect on rural poverty reduction in Kisoro district ( $\beta = 0.531, p = 0.000$ ). This result illustrates that unit improvement in education leads to improvements in poverty reduction by up to 53.1% in the communities of Kisoro district. This finding was consistent with what was earlier found by Khan, *et al.*, (2016), that education was one of the most important elements for poverty reduction. On the other hand, training was found to have a negative and insignificant effect on rural poverty reduction in Kisoro district ( $\beta = -0.118, p = 0.116$ ). On the whole, the correlation and regression results showed and explained a positive relationship that existed between human capital and rural poverty reduction in Uganda.

## CONCLUSION AND RECOMMENDATIONS

### Conclusion

The study was about how human capital would contribute to poverty reduction in rural areas of Uganda taking Kisoro district as a case study. In Uganda, poverty in rural areas had remained a challenge with numerous government approaches that yielded less sustainable impact which raised a question of their relevancy in addressing poverty in rural areas.

The purpose of the study was therefore to examine how human capital would contribute to poverty reduction in Kisoro district. However, the specific objectives were: to establish how education

could ensure rural poverty reduction in Kisoro district; to explore the effect of training on rural poverty reduction in Kisoro district; and to determine the relationship between human capital and rural poverty reduction in Kisoro district.

The study was carried out in Kisoro district from where the respondents were drawn of whom included individual household agricultural farmers and farmers' groups, technical staff, agricultural industrialists, business entrepreneurs, property owners, political leaders, religious leaders, and other opinion leaders. The respondents for quantitative responses were technical employees of Kisoro district local government while the qualitative respondents were drawn from Nyakinama, Chahi, Murora, Kanaba, Nyakabande, Nyundo, Bukimbiri, Kirundo, Nyabwishenya, Busanza and Nyarubuye sub counties. The selected respondents were those either affected by rural poverty or were involved in poverty reduction efforts.

The total number of study respondents were 391 against the targeted sample of 400 which represented 97.8 % response rate and were all involved all involved in agriculture related activities. From the 391 study respondents, 287 constituting 71.8 % were technical staff, business persons, agricultural industrialists and agricultural/ veterinary officials that participated in the survey, while the rest 104 constituting 26% comprised of individual farmers and farmer group members who participated in interviews and focus group discussions respectively.

The study used a triangulated approach of mixed methods that were both quantitative and qualitative and a cross- sectional survey method with pragmatism research paradigm was used. A number of methods were used in the study for data collection which included: survey, interviews, observations and documentary review of both primary and secondary documents; while the tools used were self- administered questionnaires, interview guide, interview schedule, observation plan, observation checklist, a camera (phone) and Stereo IC Recorder (Sony: ICD- PX470).

Arising out the collected and analyzed data, it was established that:-

Education could significantly ensure rural poverty reduction in Kisoro district. The findings established that there was a positive and significant relationship between education and rural poverty reduction ( $r = 0.415$ ,  $p < 0.05$ ). Education also explained 23.2% of the contribution on rural poverty reduction (adjusted R square = 0.232). This result demonstrated that improvements in education were followed by improvements in poverty reduction

Training had a significant effect on rural poverty reduction in Kisoro district. The findings established that there was a positive and significant relationship between training and rural poverty reduction ( $r = 0.267$ ,  $p < 0.05$ ). Training also explained 9.1% of the contribution on rural poverty reduction (adjusted R square = 0.091). This result demonstrated that improvements in training efforts were followed by improvements in poverty reduction

There was significant relationship between human capital and rural poverty reduction in Kisoro district. However, much as there was a significant contribution of human capital towards poverty reduction, it could not cause a big shift in poverty reduction since it contributed a lesser percentage of 42.2% of total causal effects from both direct and indirect effects as compared to other factors. This therefore necessitated a search for new approaches and recommendations to significantly contribute towards poverty reduction.

## **Recommendations**

There is need for government to promote public education for enhanced population enlightenment. This could be achieved by widening the scope of student scholarships through merit and quota system and also loan scheme at post- secondary school levels like at tertiary and University levels where student enrolments and completion level is low as compared to primary and secondary school levels of education. To further promote public education, Universal Primary Education (UPE), Universal Post Primary Education and Training (UPPET) popularly known as Universal Secondary Education (USE) and also Universal Post Ordinary Level Education and Training (UPOLET) should be made entirely free by Government. This would involve government's commitment of more resources in provision of lunch to students and scrap off all parents'/ guardians' contributions set by schools which have hindered children from impoverished families from progression.

Government should invest in research and development in all higher public institutions of learning like Universities among others and also public organisations involved in research. This would enable the country come up with new innovations especially in science and technology which and of the current age crucial for economic transformation of a country.

The Science and Technology courses should also be made attractive to students so as to widen on the scope of students' enrolment from the current less than 27 percent which is below the 40 percent threshold by UNESCO (National Planning Authority, 2015) to at least about 45 percent. This would enable inventions and innovations for competitiveness and growth.

The government of Uganda could introduce enabling policies to transform the human capital. The country should develop a National Human Resource Planning policy for proper identification of the country's manpower gaps and planning for appropriate and required manpower with education and skills necessary for socio and economic transformation of the country. This policy would guide on appropriate education and training courses across all accredited institutions of learning for the desired knowledge and skills in the job market to reduce on the challenge of higher levels of graduate unemployment either due to lack of skills or possession of qualifications not required in job market which renders them non-competitive.

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