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THE EFFECT OF EMPLOYMENT ON POVERTY REDUCTION IN RWANDA: AN EMPIRICAL ANALYSIS.

Dissertation submitted to the Department of Economics as partial fulfillment of the requirements for the award of Master's Degree in Economics by University of Rwanda.

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DECLARATION

I hereby declare that this research study is my original work and has not been presented to any other Institution. No part of this research should be reproduced without the authors' consent or that of the University.

Signed ……

Jeannette KABANDA

Place……..

Date……

DEDICATION

To the almighty God,

To my Husband,

To my beloved daughters,

To my Mother and my Sisters,

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Jeannette KABANDA

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LIST OF ABBREVIATIONS AND ACRONYMS

B.I.T: Bureau International du Travail

C.P.A.N: Chronic Poverty Network

CWR: Child Women Ratio

e.i: That is

EICV: Enquêtes Intégrales sur les Conditions de Vie de Ménages

ILO: International Labor Organization

NISR: National Institute of Statistics of Rwanda

R.D: Rural Development

SMEs: Small and Medium Enterprises

VS : Versus

VUP : Vision 2020 Umurenge Program

ABSTRACT

This research assesses the effect of employment to poverty reduction in Rwanda. For this purpose we investigate the micro-economic relationship between employment and poverty indicators. For the estimation of the ordered logit model, the Stata software was used to analyze data from EICV3 and to establish the relationship and the level of significance between poverty status as dependant variables and the household characteristics, employment variables as explanatory variables.

They include the gender of the household head, marital status, education level, the status and sector of employment. From empirical results, households employed in wage- non-farm have high chance of being poor than those in wage non -farm. Factors that help household workers to avoid poverty are education. (from primary, secondary, higher education and vocational).

The research suggests that modern technologies should be encouraged for households working in wage farm so as to increase productivity. Also, much emphasis should be put in investing for education that should increase workers capabilities, competence and thus increase productivity.

CHAPTER ONE

GENERAL INTRODUCTION

1.1. Background of the study

Unemployment is one of the biggest problems in the world especially in developing countries, and has indeed been a fundamental cause of poverty but has also been a result of the structural poverty in African economies both rural and urban. The lack of sufficient productive and decent employment opportunities is a major bottleneck to reducing poverty and achieving the MDGs; it is also an increasing source of social and political instability (OECD, 2009).

Hull (2009), asserted that whether they are subsistence farmers, salaried workers, or self-employed entrepreneurs, poor people derive most of their income from work. This basic fact means that the level of employment, the quality of jobs, and the access which the poor have to decent earnings opportunities will be crucial determinants of poverty reduction.

Similarly, Maetrins (2013), affirmed that the Africa's recent economic performance has been quite impressive. However, strong economic growth has not always delivered corresponding benefits in terms of poverty reduction, partly because it has failed to generate sufficient productive employment. His concerns were, despite the strong growth record, African economies continue to face substantial economic and social challenges. For instance, an increasing number of young people aged between 18-24 years are entering the labour market, thus requiring economies to create more and better employment opportunities.According to Rwanda Youth Emploment Assesment report (2009) 67% of the total population of the Rwanda is under 25 years old. Lack of such adjustments have resulted in high

unemeployment among the youth. Other social challenges include gender discrimination especially woment in context to african norms which opresses the plight of women to pursue their dreams in income generation activities.

Islam (2003) asserted that the experience of countries, which succeeded in reducing poverty significantly, indicates the importance of sustained high growth in achieving this result. However, studieson poverty are replete with an equally important finding that high growth alone is notadequate; the pattern and sources of growth as well as the manner in which its benefits are distributed are extremely important from the point of view of achieving the goal of poverty reduction. And in that regard, the importance of employment as the key link between growth and poverty alleviation is often pointed out.

Employment opportunities in most of the African countries tends to concentrate in urban areas that in rural areas. However, majority of rural dwellers are much vulnerable to poverty subjection that those in urban areas (World Bank 2013). Contrary to this, According to EICV3 thematic report (2010/11), out of the 1.4 million (net) new people working between EICV1 and EICV3, the largest absolute increase in net new jobs has come from agriculture (430,000), followed by trade (337,000), and government (127,000). The largest percentage increases have come in mining (22% per year), construction (22% per year), and tourism (21% per year), all of which show an increase from a low base (NISR, 2011).

This implies that the largest source of employment is agriculture of which it is widely practiced in rural areas and yet majority of the rural population still languish in poverty. In rural areas, the challenge is great due to many decent work deficits faced by rural workers. These include low pay, poor quality jobs that are unrecognized and unprotected by law,

widespread underemployment, the absence of rights at work, inadequate social protection, and the lack of a representative voice (World Bank, 2012).

Although Rwanda is one of the poorest, most densely populated nations in Africa (World Bank 2010), it has made impressive progress in rehabilitating and stabilizing its economy after 1994 genocide. The overall economy has grown at a significant rate. From 2001-2006, real GDP growth averaged 6.4% annually. Exports have grown by approximately 12.5% annually since 2001 with coffee, tourism, and tea accounting for 60% of exports in 2005. Ninety percent of the population is engaged in agricultural production. Food crops account for approximately one-third of the country's GDP, yet food production often does not keep pace with population growth. Growth and profitability in this sector are constrained both by limited access to land and the very small size of plots that are available for cultivation. In addition to that, majority of Rwandans remain unemployed, underemployed and not well remunerated (NISR, 2012).

In Rwanda, the overall employment remains high at over 84% of the population aged 16 years and above. The growth in people in work has kept pace with rapid population growth over the last 10 years. The biggest change in the employment rates over the last 10 years has been for young people between the ages of 16 and 24. Their employment rate has dropped from 77% to 64%, which reflects a positive trend of increasing educational enrolment. Employment rates are generally higher in rural areas than urban areas, and are lowest of all in Kigali City (NISR, 2012). This study therefore seeks to establish the link between employment capacity and poverty reduction in Rwanda.

1.2. Problem statement

Unemployment issue is very complex but very crucial for peace, economic growth and poverty reduction. An economic growth which is not supported by job creation does not have any impact on poverty reduction. When people are unemployed, they lack sources of income, they are insecure, and their living conditions depend on the society (the government, friends, parents…). Unemployment also affects population growth in the sense that unemployed people have a lot of time on their disposal such that sexual urge may lead to unplanned pregnancies. As a result, when the population growth is increasing higher that economic growth, poverty will occur consequently.

One of the perfect examples which most countries refer while gauging their performance is Singapore. This country took a complete turn-around step to develop the capacity of their citizens through the improvement of their service industry. This was the only alternative which seemed viable by then, a situation similar to Rwanda's limited natural resources and small geographic capacity vis-à-vis population growth. The country gained independence in early 60's when most of the African countries were liberating themselves from colonialism and so their economies were almost at par. Now Singapore is one of the developed countries whose per capita income is equal to the China and the employment rate is high hence the poverty level is low (NISR, 2012).

In Rwanda, off-farm and non-agricultural production have become extremely important elements of household survival strategies. Limited access to suitable land and low returns to small holder agricultural necessitate a focus on urban-based markets. Although industry and services employ only 10% of the labor force, they contribute, respectively, an estimated 21.7% and 41.4% to Rwanda's GDP. From 2003 to 2007, the largest-growing sectors in

industry were mining/quarrying and construction*;* the service sector experienced growth in transport, logistics, ICT and financial services (IFAD, 2006). Addressing the factors that affect household's participation in different types of employment and the income it generates from them will serve as a source of information for policy makers, administrators and other stakeholders for the benefit of the poor household in particular. Therefore, this study aims to assess the relationship between employment and poverty reduction in Rwanda.

1.3. Research objectives

The overall objective of this research is to assess the effect of employment capacity on poverty reduction in Rwanda

Specifically, the research aims:

i. To analyze the relationship between household characteristics and poverty status in Rwanda.
ii. To establish the effects of employment variables on poverty status in Rwanda.

1.4. Research questions

The main research is focused on the following questions:

i. What are the relationship between household characteristics and poverty status in Rwanda?
ii. How does an employment variable affect poverty status in Rwanda?

1.5. Research hypothesis

H_1: There is a statistical significant relationship between household characteristics and poverty status in Rwanda.

H_2: There is a statistical significant relationship between employment variables and poverty status.

1.6. Significance of the research

The importance of this research highlights that unemployment is the major hindrance and the real cause of poverty in Rwanda. As a result this research try to stress out the role of employment programmes and strategies which can improve the livelihoods of Rwandan households and thus contribute to poverty reduction. This study could also be useful for the Government of Rwanda and other relevant partners in order to devise interventions that could serve as a source of reliable information for policy makers regarding the actions that should be undertaken so as to improve household's participation in different employment activities that can generate income for them. From the findings of this research, I strongly agree that the recommendations put forth will make different stakeholders including public and private institutions to consider employment programmes more meaningful, transforming them into an effective tool for poverty reduction in Rwanda. Finally, the outcome could also use as reference for researchers who are interested to conduct further study on the same field.

1.7. The scope of the research

The scope suggests both geographical and time frame.The area of study is covering the whole country reference to the Household survey (EICV3) conducted by the National Institute of Statistics in Rwanda (NISR) from 2010- 2012.

1.8. Structure of the thesis

The thesis is structured into five chapters. Chapter one covers the introduction which contains the research problem, hypothesis, research objectives, significance and the structure of the research.

Chapter Two revisits the literature review on both employment and poverty. It demonstrates different theories of employment and it's linkages to poverty reduction. Also, some empirical experiences on employment and poverty reduction linkages are stated in this chapter.

Chapter Three concerns the methodology of the study; it highlights different methods and techniques used during the research. In this chapter the description of the study area, the sources of data, the methods used to obtain the data and the theoretical and econometric models used for analyzing the data set are presented.

The analysis of empirical results is mentioned in chapter four. Lastly, chapter Five is about the conclusion with some final recommendations. After the summary of the entire research, the thesis then put forth recommendations that can improve employment opportunities as a vehicle to poverty reduction in Rwanda.

CHAPTER TWO

THEORETICAL FRAMEWORK AND LITTERATURE REVIEW

2.0. Definitions of key concepts

To understand the role of employment in poverty reduction and the tradeoff associated with them, it is essential to understand different concepts related to employment , poverty, economic growth with its' linkages with employment and poverty reduction. Finally, empirical experiences focused on employment for poverty reduction will be highlighted in this chapter. The literature review gives the background for the study and establishes strong linkages between poverty reduction and employment.

Employment

According to Borjas(2013), the term employment comprised all persons who reported in the labor force survey that they worked as paid workers or self-employed for at least one hour during the reference period**.** The bureau of labor statistics classifies all persons aged sixteen or older into one of the three categories: the employed, the unemployed, and the residual group that is said to be out of the labor force. The most statistical indicator of employment is the employment-to-population ratio or employment rate in short.

Unemployment rate

The unemployment rate gives the fraction of labor force participants who are unemployed. In other words it is the number of persons unemployed expressed as a percentage of the labour force (Gwartnes, 2000). Persons are considered unemployed if they do not have a job, are available for work and have actively looked for work during the past four weeks.

Persons who have given up and stopped looking for work are not counted as unemployed, but are considered to be "out of the labor force". At the same time, some persons who have little

intention of working at the present time may claim to be "actively looking "for a job in order to qualify for unemployment benefits.

Hidden Unemployment

There are various concepts and manifestation of hidden or concealed unemployment**.** The hidden unemployed is the number of persons who are out of the labor force because they are "discouraged over job prospects" as well as persons who are only "marginally attached" to the labor force. Discouraged workers are those who are available for employment, but currently not actively seeking work because of the past failure in finding work. Hidden unemployment should be added to the pool of unemployed workers so that the unemployment problem is significantly worse than it appeared from the Bureau of the Labor statistics.

Under employment

According to ILO(1998), the 16th International Conference of labour statistics adopted a standard definition of time related underemployment. The new definition is based on three criteria. It includes all persons in employment who, during the reference period were: willing to work additional hours; available to work additional hours; had worked less than a specified working time threshold**.**

There are two types of underemployment (Osmani, 2002): The *open underemployed* that is those who work less than full time and hence cannot earn enough to rise above the poverty line. The interpretation of the open unemployment and employment rates as indicators of a well-functioning labour market is problematic in developing countries. When unemployment is not an option where a person can survive, work of some sort has to be found, often casual and informal work .Unemployment therefore should be understood in relation to the strength

of the social safety net, the prevalence of the informal employment and how much informal job is underemployment due to formal employment possibilities (Roncolate, 2008).

The *disguised underemployed* that is the Nurkse-Lewis type surplus labour-those who apparently work full time but at low intensity, within an institutional framework that permits both work sharing and income sharing.

Poverty

Poverty is multi-dimensional. In the simplest definition it is the lack of household income (or consumption). The World Bank (1996) measures income (or consumption) poverty using a poverty line of $1.25 per day in $US 2005 purchasing-power-adjusted terms.

More generally, poverty means *the inability to meet basic needs*, including food, shelter, clothing, water and sanitation, education, and healthcare. In this sense, poverty generally reflects a combination of income poverty at the household level and poverty at the community level in the provision of basic infrastructure and public services. An official definition of poverty must include inadequate income or consumption as well as lack of access to land. At individual level, a man or woman is considered poor if they are confronted by a complex of inter-linked problems and cannot resolve them, do not have enough land, income or other resources to satisfy their basic needs and as a result live in precarious conditions; basic needs include food, clothing, medical costs, children's schooling etc. and are unable to look after themselves (MINECOFIN, 2002c). This kind of analysis can be made at the local and national level, but the requisite data do not exist at the global level.

2.1. Theoretical review

According to Lewis (1954) and Kuznets (1955), economic growth is marked by the gradual shift of workers out of the lower-paying segments and into the higher paying ones. They also agreed that the main development problem is not unemployment but rather low incomes in the poorer parts of the economy. And they agreed to that the same worker would earn quite different amounts depending on where he or she is located.

The emergence of human capital theory in the 1960s by Schultz (1961) and Becker (1964) also earned its developers the Nobel Prize. According to their version of the human capital model, education and training would improve workers' skills, enabling them to work in different economic sectors and earn more. Other Nobel Prize winners modeled the returns to education differently. Signaling models maintain that workers get educated in order to signal to employers that they (the educated workers) are inherently more productive than other workers (Spence, 1973).

Screening models examine what happens when the educational system certifies which workers are more productive than others and the educated workers use their education to move to the front of the queue and be hired preferentially for jobs for which education is advantageous but not required (Stiglitz, 1975).

Wachter (1974) summarized the dual labor market model thus: First, it is useful to dichotomize the economy into a primary and a secondary sector. Second, the wage and employment mechanisms in the secondary sector are distinct from those in the primary sector. Third, economic mobility between these two sectors is sharply limited, and hence workers in the secondary sector are essentially trapped there. Finally, the secondary sector is

marked by pervasive underemployment because workers who could be trained for skilled jobs at no more than the usual cost are confined to unskilled jobs.

Wachterand also Cain (1976) stressed that for labor market dualism to exist; different wages must be paid in different sector to comparable workers. Empirical researchers then showed that observationally equivalent workers earned different amounts in different parts of an economy. However, skeptics such as Rosenzweig (1988) remained unconvinced, maintaining that different earnings reflected differences in unmeasured human capital. The alternative to a segmented labor market model is a unitary labor market model, in which all workers with given skills receive the same wage regardless of which part of the labor market they work in. As a result, when high economic growth is associated with high labour productivity then poverty reduction occurs.

2.2. Theories related to poverty

According to Sen (1983) there are aspects and situations which may lead someone or a society into poverty. This may include: inequality, vulnerability, economic exclusion and underdevelopment which are frequent causes of poverty.

(i) Poverty and inequality

Inequality differs from poverty but is also related to it. While inequality is concerned with distribution of wealth within a population group, poverty focuses only on those people whose standard of living falls below an appropriate threshold level (such as a poverty datum line) (Kircher, 2002; World Bank, 2000). This threshold may be set in absolute terms (based on an externally determined norm, such as calorie requirements) or relative terms (for example, a fraction of the overall average standard of living).

The relative poverty is more closely related to inequality, in that what it means to be poor reflects the prevailing living conditions of the whole population. Moreover, most analysts argue that the movement in the Gini Co-efficient seems to closely follow that in poverty. However, this relationship can only be established in countries where comparative data is available. It is thus not surprising to find that the analysis of poverty often employs indicators of equality.

This could be done in a number of ways, for example: through disaggregation; associating distributional measures with other poverty indicators; or by specifying some mathematical formula. The notion for doing so, as some analysts would argue, is that high levels of inequality contribute to high levels of poverty in several ways, for instance for any given level of economic development or mean income, higher inequality implies higher poverty, since a smaller share of resources is obtained by those at the bottom of the distribution of income or consumption.

Higher initial inequality may result in lower subsequent growth and, therefore, in less poverty reduction. For example, access to credit and other resources may be concentrated in the hands of privileged groups, thereby preventing the poor from investing; and may reduce the benefits of growth for the poor, because a higher initial inequality may lower the share of the poor's benefits from growth. In the extreme case, if one person has all the resources, then regardless of the rate of growth, the poverty of the remaining population will never be reduced through growth (Sen A. 1992).

Poverty and vulnerability

According to May (1998), international experience of poverty alleviation programs suggests that poverty is not a static condition among individuals, households or communities. Rather, it is recognized that, although some individuals or households are permanently poor, others

move into and out of poverty. This may be a result of life-cycle changes, specific events such as the illness of a main income earner, or deterioration in external economic conditions.

In light of the above quotation, the concept of vulnerability is increasingly applied in order to understand these processes of change. In fact, development practitioners tend to use vulnerability as a proxy for poverty, because certain combinations of vulnerability may be strongly correlated with poverty, i.e. female-headed households, families living in remote and isolated mountainous regions, members of minority groups, illegal immigrants, illiterate individuals, seasonal employees and so on. It should, however, be noted that vulnerability is not the same as poverty.

According to the World Bank (2000), vulnerability is the present probability or risk of being in poverty or falling into deeper poverty in the future. This may be referred to as a downside risk. For instance, vulnerability is a function of two main variables: exposure and response to downward pressures. According to Shaffer (2001), downward pressures are sometimes referred to as stresses and shocks, the former gradual and cumulative, and the latter sudden and unpredictable.

Poverty and underdevelopment

The distinction between poverty and underdevelopment depends on how each is defined. When defined in broad human deprivation terms, poverty is often viewed as a form of underdevelopment, i.e. "an economic situation in which there are persistent low levels of living in conjunction with absolute poverty, low income per capita, low rates of economic growth, low consumption levels, poor health services, high death rates, high birthrates, dependence on foreign economies, and limited freedom to choose among activities that satisfy human wants (Todaro, 2000).

In other words, if human development is about expanding people's choices (as it has been defined in human development reports since 1990), then poverty means that opportunities

and choices most basic to human development are denied. However, the 1997 Human Development Report distinguishes between the two concepts by associating the former with individuals and the latter with a macro perspective. The contrast between human development and human poverty reflects two different ways of evaluating development. One way, focuses on the advances made by all groups in each community, from the rich to the poor. This contrasts with an alternative viewpoint, the derivational perspective, in which development is judged by the way that the poor and deprived people fare in each community. Given the close relationship between these two concepts, it is confirmed that many poverty indicators are the same as those used to measure underdevelopment.

2.2.1. Types of poverty

Policy is directly influenced by the way in which poverty is defined. Moreover, the extent of poverty is determined by the way in which it is defined. The aim of this section will therefore be to identify the different types of poverty.

Absolute versus relative poverty

There is a long tradition of debate about relative versus absolute definitions of poverty. Relative and absolute definitions of poverty tap into fundamentally divergent notions of difference and deprivation (Shanahan &Tuma, 1994). Hence, absolute and relative standards typically produce different policy implications and accounts of the experience of poverty, and differ in terms of what the extent of poverty is determined (Townsend, 1980, cited in Brady, 2003).

Absolute poverty is viewed as an objective and scientific definition that is based on the notion of subsistence. In a narrow sense, it is a state in which a person cannot secure his long-term physical survival (Kircher, 2002). This measure is universal and not time bound, and has

the advantage of international comparability. An example of this would be the minimum amount of calorie intake which is recommended by prominent institutions such as the FAO and World Health Organization, or the $1 a day and $2 a day that is used by the Human Development Reports when examining the extent of absolute poverty throughout the world.

However, in a broader sense, the definition of absolute poverty includes various needs besides pure physical survival, i.e. a state in which a person does not have enough to live on, based on socially acceptable living conditions, which include other essential goods besides nutritional requirements, e.g. clothing and shelter in hostile climates. It should be noted that the broader definition includes a certain amount of relativity.

According to Kircher (2002), an example of this has already been provided by Adam Smith who assesses that the ownership of certain things such as leather shoes might be necessary in one society to achieve social acceptance, while in another their possession is not relevant. Therefore, based on this view, the concept is considered to be absolute, in that it is derived from unfulfilled minimum needs which are relatively stable in a given society This explains why some of the rich countries, such as the United States (that use an absolute poverty line) have higher poverty lines than poor countries.

Chronic poverty versus transient

Jalan and Ravallion (1998) defined the transient component of poverty as one which depends to the variability in consumption levels, while the chronic component summarizes what the poverty level would be if consumption did not vary about its mean value. According to Mckay and lawson(2002), the characteristics most commonly associated with chronic poverty include (among others): lack of human capital, the demographic composition of households, lack of ownership of physical asset and law paid labour. Chronic poverty is

characterized by its long duration. Chronically poor people experience deprivation over many years. They may live in poverty for their entire lives and often pass their poverty to future generations through their children. As well as being income poor, people who are chronically poor are often deprived in many other dimensions, particularly education, health and nutritional status. A range of factors keep them trapped in chronic poverty, including living in remote rural areas; little or no ownership of land, livestock or housing; limited education and skills; unreliable and poorly paid work opportunities; poor social networks and discrimination, and vulnerability to risks including illness and drought(Stepherd Andrew et al, 2014).

Among factors that contribute to transience of poverty are : family size, government transfers, seasonality of economic activities, migration and life cycle events. Empirical evidence strongly suggests that transient poverty is associated with inability for families to maintain their consumption level when facing fluctuations or shocks that adversely affect their incomes or individual circumstances (Jalan and Ravallion, 1998).

2.2.2. Causes of poverty

There are several basic causes of extreme poverty. These include:

Adverse geographical condition whereby the people experience physical isolation of the region (landlocked, Small Island, mountainous) and sparseness of the population, poor climate (hyper arid, flood prone), poor agriculture (poor soils, land degradation, adverse climate) or poor fisheries, lack of energy resources (no fossil fuels, no hydro power), disease ecology (hyper-endemic vector-borne diseases such as malaria), major vulnerability hazards such as floods, droughts, typhoons, earthquakes and other hazards. The Horn of Africa and the Sahel are examples of regions with highly adverse geographical conditions: landlocked,

generally devoid of fossil fuels, hyper-arid and drought prone, and endemic to tropical diseases, including malaria and meningitis. Many small-island states are geographically isolated (Hagenaars, 1991).

Prolonged violent conflict and international sanctions. The incidence of extreme poverty is highly correlated with violent conflict and instability. Afghanistan has been reduced to misery through thirty years of nearly continuous conflict. Likewise, Haiti's economy was ravaged by repeated episodes of international sanctions (World Bank, 2000).

Despotic government and poor governance. Poor governance, including high levels of corruption and the systematic misallocation of a country's resources away from the needs of the poor, are an important determinant of extreme poverty. North Korea is the reference case of despotic rule leading to extreme poverty despite otherwise favorable economic potential. The failure by some of the resource-rich countries in Africa to use their relative wealth to overcome the disadvantages of unfavorable geography is another potent example of poor governance.

Gender and ethnic or social discrimination. Indigenous peoples (roughly 400 million around the world) and other excluded groups have faced centuries of extreme discrimination and social exclusion. As a result they tend to live in the most remote parts of countries (c.f. adverse geography above) and constitute a particularly high share of the extreme poor, particularly in Asia. Girls and women continue to face extreme discrimination in social practices and legal rights (e.g. the right to land title) in many parts of the world, which increases the risk of extreme poverty for households (Laderchi et al, 2003).

Extreme total fertility rates. Rural areas in many parts of sub-Saharan Africa, West Asia, and Central Asia have higher total fertility rates. These higher TFRs result from culture (religious tenets, gender discrimination), the lack of girls' schooling, high child mortality (leading to high fertility choices of households) and the unavailability of contraceptives and family planning services. High TFRs are one of the most important determinants of extreme poverty since they reduce a household's per capita investment in the health and education of its children as well as a government's per capita investments in infrastructure and social services that can reduce poverty (Lipton, 1997).

Lack of access to land. While most of the rural poor in Africa own too little land or many extreme poor does not have land title. This can confirm that the lack of access to land and a lack to gainful employment opportunities can constitute an important driver of extreme poverty.

2.2.4. Employment-poverty reduction linkages

In order to see how employment contributes to poverty reduction, it is useful to distinguish between poor people in the labour force and those who are not. Some among the latter group may have no one in the labour force to support them and they would need some form of social provisioning in order to alleviate their poverty. However, most of the poor people who are not in the labour force would actually be dependants of the first category of poor people, so that their conditions will be inextricably linked with each other. For analytical purposes, therefore, it is adequate to focus only on those among the poor people who are in the labour force. The poor people in the labour force can in turn be divided into two groups: the unemployed poor and the working poor.

As an empirical reality, it is fair to suggest that the unemployed poor would constitute a numerically insignificant category in the poor countries. The reason simply is that the vast majority of these countries do not have any social insurance mechanism, without which the

poor cannot afford to remain unemployed. Thus the working poor would constitute by far the major segment of the poor in the labour force. The critical issue with regard to the working poor is why they are poor even though they are employed. Two broad categories of proximate causes can be distinguished: *underemployment* and *low returns to labour*. In other words, the quantity and quality of employment determine whether employment would lead to poverty reduction (Huong et al, 2003).

2.2.5. Economic growth-employment-poverty reduction linkages

Employment with rising productivity is the critical link in the growth-employment-poverty nexus. Rising economic growth results in poverty reduction when the productivity of poor workers increases, either in their current occupation, or in new jobs or opportunities for self-employment.

In the ultimate analysis, economic growth will contribute to higher employment and through higher employment to reduced poverty on the basis of three factors:

The growth factor: The rate at which the production potential of the economy expands, as represented by an upward shift of the production possibility frontier.

The elasticity factor: The extent to which an upward shift of the production possibility frontier enhances the employment potential – the latter being defined as the scope for improving the quality and quantity of employment. In other words, we are concerned here with the elasticity of employment potential with respect to growth in production potential.

The integrability factor: The extent to which the poor are able to integrate into economic processes so that, when growth occurs and the employment potential expands, they can take advantage of the greater scope for improving the quality and quantity of employment. It may be useful to make some brief remarks on each of these underlying factors. Poverty reduction cannot be sustained unless an economy's production potential is expanded, as determined by the growth of its labour force, accumulation of human and physical capital, and technological

progress. Only such an expansion can create the basis for sustained increase in the incomes of everyone, including poor people. Huong et al(2003)**.**

2.3. Empirical review on employment and poverty reduction

At micro level, different studies have shown the interplay between economic development, labour markets and poverty using household surveys, wherein poverty profiles are constructed for a variety of household characteristics. Some of the micro-studies focus on employment as a main determinant of poverty. Ghaiha(1988) developed an analytical framework showing that poverty reducing effects are largely from village specific variables of development, new technologies , education and the impact on the poor in different occupational group vary depending on different factors.

Rahman and Islam (2003) examined whether self-employment, casual wage employment and employment as "employee" have different implications for the chances of being in Poverty. Logistics regressions were used (Rahman & Islam (2003) with the dependant variable as the probability of being in poverty. Dummy variables for three statuses of employment have been included as explanatory variables. Among the sector s of employment, agriculture was the base. Other households' characteristics variables included were person's age, education and household resources indicators.

Regression results showed that day labourers have high probability of being poor than self employed. Employee status is better than wage labourer, as it does not have a significant positive impact on poverty. Similarly, keeping other factors the same, the movement from agriculture to non agriculture, increase the chances of rising out of poverty.

Similarly, another study was conducted on employment and poverty in Cambodia. This paper used a probit model to explore the magnitude of the probable effects of employment on household poverty in Cambodia. It examines whether an increase in the number of family member engaged in each economic activity will reduce or increase the likelihood of their being poor. This approach has been adopted from previous studies by Jemio and Choque (2003), including factors such as employment, human capital and related assets.

Additionaly, Huong et al (2003) and Krong Kaew et al also used the probit model in assessing the connection between employment and poverty in Vietnam and Thailand respectively, including employment characteristics, income and means of income production and socio-economic environment as factors that affect poverty. From the above description, among workers in the three main sectors, those engaged in services were the last likely to be poor, while those employed in industry were almost worse off the agricultural workers. The probit coefficients rarely have any direct interpretation. Therefore, marginal effects from Dprobit are measured to see the effects the change in regressors have on the outcome variable, which is poverty likelihood.

From empirical estimations, agricultural households have higher probability of being poor than those engaged in industry. The study also found other crucial factor s in determining the likelihood of poverty besides employment variables. Education of the household head, the number of household members aged between 18 and 64 years and the size of the household land reduce household poverty to a significant extent. Paid employment, household size and members aged below 18 years are variables contributing to household poverty.

Likewise, Sundaram & Suresh Trndular (2002) analyzed employment poverty linkages in Madhya Pradesh (India). This paper used the probit model framework and examined the relationship between the household level characteristics in general and their labor market

characteristics in particular and the probability of the household being poor that is having monthly per capita consumer expenditure below poverty line. From the regression results, across household types differentiated by principal means of livelihood, agricultural labour households have the highest proportion of households below poverty line. The socio-economic characteristics such as scheduled castes and Tribes of labour households are perceived to be specifically disadvantaged may be hypothesized to raise the probability of such a household being poor. As regards to demographic characteristics, the study focused on the child-woman ration (CWR) or rather the attendant child care demands on the time of women may be considered to constain to some extent of their participation in labour market activities and limiting them for mobility for skill formation through sustained on-job training or continued formal education. A higher CWR may be viewed as a factor raising the probability of the household being poor.

The augmentation of per capita land possessed would reduce the probability of the household being poor. The shift from status having milk cattle to one of not having any raised the probability of the household being poor.

Considering the absence of even one regular wage for salaried worker in non agriculture raises the probability of the household being poor. Also, the study found that the effect of raising the number of days worked in a week by usual status worker in the household lower their probability of being poor.

The rise proportion of adult workers with secondary or higher level of education would lower the probability of the household being poor. Finally, living in rural area in Madha Pradesh (India) increases the probability of being poor.

Other studies follow the categorical variable methodology to find the determinants of poverty status.

Geda et al (2005) use household data from Kenya to analyse probable determinants of poverty using both binomial and ordered logistic models. The results show that the level of education, household size and employment in agriculture are strongly correlated with poverty status. They also found that the variables that were associated with poverty in binomial model were also significant in the ordered logistic model.

In Cameroon, Epo(2010) used binomial and ordered logistic regressions to research the determinants of moderate and persistent poverty status in Cameroon. He found that the age of the household head, education, fraction of working adult household members and access to infrastructure are factors associated with lower incidence of poverty. He also found significant regional variables indicating that the probability of being poor rises in rural areas.

2.4. Employment and poverty reduction in Rwanda

According to EICV 2 and EICV 3 (2012) surveys, household income is separated into agricultural self-employment income, nonfarm self-employment farm wage income, non – farm wage income and transfer income. One particular interest is the pattern of poverty by economic activity category is that Poverty is highest among households who obtain more that on half of their income from farm wage work, in other words from working on another people's land.

The next highest level of poverty is among those that are self-employed in agriculture although many others in this category are not poor. It quite clear that for many, non-agricultural work is the secure route to escape from poverty. This can be retrieved where poverty is lower for those obtaining half or more of their income from this source, whether from wages of self –employed. Poor households have more revenue from farm wages than non -farm households.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This chapter highlights the methods that were used in carrying out the research. It analyses the research design, survey population, source of data, methods of data collection, reliability and validity of the instruments and data analysis. It also presents the econometric tools employed in the study that include model specifications, variables of interest and the empirical estimation process.

3.2. Methodological approach

Poverty profiles are to some extent explorative. Whether an individual or a household with a specific combination of characteristics ends up poor or not depends on the macro-economic situation and the kind of employment that the household members are engaged in.

The principal goal for this research is to discover the determinants of poverty status. To find employment as the major determinant for poverty reduction in Rwanda, we used the logistic regression. This method sought to explain whether a household is poor through categorical variables, by utilizing an ordered logit model. This is also known as the proportional odds model. The dependant variable is ordered, where the variable could take the value of one (1) if the household is extremely poor, two (2) if the household is poor and three (3) if non poor. Therefore, the study mainly ascertains relationships between variables and only proposes causal factors.

According to Park and Kerr (1990), with logit model one can interpret the dependent variable as the log odds ratio that a particular event to occur given values of explanatory variables.

Also, the estimation of the logit model uses maximum likelihood (ML) techniques.

Rwanda poverty status is an ordered variable, and we have used the monthly per capita household expenditure to define whether the household is above or below the poverty line . Our X_i consists of three types of variables, employment variables, variables of individual household characteristics

Household characteristics and Employment variables: Employment differs in many dimensions. In our analysis we consider three dimensions: status, Sector and skill intensity, i.e. the education of the worker. We distinguish different types of employment status: self-employed, salaried workers, unpaid worker and independent workers.

The main individual variable is the educational level of workers. Household type gives the main source of income. In here, data distinguishes the following types: the main source of income could be from the wage farmer, wage non-farmer, VUP scheme, Independent farmer, Independent non farmer and unpaid family worker. We also considered the employment sector which Public, private formal and Informal, parastatal , NGOs , International and others.

The effect of education is the straightest forward. The education level and the poverty risk are inversely related. The more interesting questions with regard to education are therefore whether we find a difference in the effects of education level: that is illiterate, Primary, secondary, higher education and vocational training. A related question is which level of education is needed to be out of poverty with a high probability.

The expected effect of the employment status is not that clear. Compared to self-employed and salaried, the risk of being poor is highest for casual workers. The difference between self-employed and salaried is not straight forward either. The self-employed include high-paid

professions like doctors, IT professionals, but also petty activities like street vendors.

3.2.1. The ordered logit model of employment to status

This study used a Logistic regression model which it is an appropriate technique to observe the likelihood of a household for being poor or being at a risk of entering or escaping poverty. This model was used for the reasons to investigate the importance of household and labour characteristics for poverty reduction. The ideal case of course is that an occupation is poverty reducing. In this case, the occupation earns more than what is needed to cover the basic needs of working person and therefore increases the consumption of the other household members as well. Employment then reduced the probability of the household being poor. This model analyzes the likelihood of a household being poor in relation to numerous independent variables which determine whether someone is extremely poor, poor and non poor.

The model form for predicted probability is given in the following equation:

$$\text{Logit}(P) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + E_i$$

Whereby: Where X1…X5 were the predictors variable; i.e gender of household head, marital status, level of education, occupation status, sector and industry of occupation and p is denoted as likelihood of a household being poor (1 as Extremely poor, 2 is Poor and 3 Non Poor), Ei is the error term. The analysis unit being the household head as very significant in influencing the change in for all household members. Below is summarized definition of variables :

Table 1: Definition of variables

	Variables	**Description**	**Definition**
	Dependent variable		
	Extremely Poor /Poor	Poverty	1=Household being extremely poor, 2= Household being poor 3= Household being non poor
	Independent Variables		
X_1	GenderH	Gender of household head	1= Male 0= Female
X_2	MaritalH	Marital status of the household head	1= Married 0= otherwise
X_3	EducH	Level of education of the household head	1. No education 2. Primary level 3. Secondary level 4. Higher education
X_4	Occupation status	Employed	1. Wage farm 2. Wage non-farm 3. VUP scheme 4. Independent farmer 5. Unpaid family worker 6. Independent non farmer 7. Nonfarm family unpaid worker 8. Other non-paid (apprentice)
X_5	Occupational Sector	Farming	1. Public 2. Parastatal 3. Private, formal 4. Private, informal 5. NGO local 6. International 7. Other 8. Don't know

3.3. Data requirements

The researcher used the secondary data from the EICV 3 (Enquêtes Intégrales sur les Conditions de Vie de Ménages) conducted by the National Institute of Statistics of Rwanda, a survey conducted in 2010/2011. Reference to the EICV3, Thematic report 2012, the sampling frame for the EICV3 was based on an updated structure from villages. The urban and rural classification of the villages in the EICV3 data was based on the corresponding geographic designations from the 2002 Rwanda Census of Population and Housing. Since the EICV2 sample design was based on the sampling frame from the 2002 census, this urban/ rural classification in the EICV3 data makes it possible to directly compare the urban and rural results from the EICV2 and EICV3 data. The data set from EICV3 was used the sample size of the population is 14,308 from 1,230 sampled villages representative of Districts.

For the estimation of the logistic model, the stata software was used to establish the relationship between employment variables, household characteristics and poverty status.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Presentation of results

This chapter presents the data in table format. The data was analyzed using the ordered logit model to generate odds ratios and marginal effects as indicated in the table below. The table also subdivided into sections whereby the first section contains the relationship between employment variables and poverty status while section two indicated the effects of household characteristics on poverty status.

Table 2. Ordered Logit model estimation with Marginal Effects

		Marginal effects		
POVERTY	**Odds ratios**	**dy/dx (Extremely poor)**	**dy/dx (Poor)**	**dy/dx (Non poor)**
Occupation status				
Wage_farm	1.262145	-.0395043	-.0172167	.056721
Wage_nonfarm	1.671049	-.0823057	-.0401321	.1224378
VUP_scheme	.9610416	.0071137	.0027033	-.009817
Independent_farmer	1.205727	-.0322035	-.0135678	.0457713
Unpaid_family_worker	1.285845	-.0427901	-.0185035	.0612936
Independent_non_farmer	1.249172	-.0375902	-.0165542	.0541444
Non_farm_family_unpaid_worker	.229405	.0345976	.0155485	-.0501461
Other_nonpaid_apprentice	.353317	.0492312	.0235092	-.0727404
Sector of work				
Public	.6090959	.0987334	.0245804	-.1233138
Parastatal	.7060111	.0672252	.019492	-.0867172
Private_formal	.7347135	.0587613	-.0179871	-.0767484
Private_informal	.7909523	.0427871	.0152971	-.0580842
NGO_local	.8065538	.0402589	.0132086	-.0534675

Dont_know	.5909285	.1057728	.0249687	-.1307415
Permanently_employed	.9053391	.0177191	.0068207	-.0245398
Household characteristics				
1. Education Level				
Not_educ	.686521	.0457262	.016605	-.0623312
Primary_educ	1.731181	-.0848809	-.0442395	.1291204
Secondary_educ	1.397392	-.0544636	-.0259595	.0804231
Vocational_educ	1.681719	-.0792501	-.0424527	.1217028
Higher_educ	17.48633	-.2172009	-.1855064	.4027073
2. Social demographic factors				
Gender	.9654248	.0062335	.0024404	-.0086738
Married_MM	1.095953	-.0160049	-.0065049	.0225098
Married_Poli	.7027793	.0681391	.0197178	-.0878568
Living_together	.7486282	.0548087	.0172342	-.0720429
Divorced	.0775892	.5638132	-.0940981	-.4697151
Separated	.5743311	.1117412	.0259825	-.1377237
Single	1.356533	-.0522158	-.022204	.0744198
/cut1	-.8052032			
/cut2	.1650425			
Number of obs = 68398				
LR chi2(27) = 2480.49				
Prob > chi2 = 0.0000				
Log likelihood = -66870.648				
Pseudo R2 = 0.0182				
(*) dy/dx is for discrete change of dummy variable from 0 to 1				

4.2. Interpretation of results

The use of ordered logit model enabled the study to look at how particular variables affect the magnitude of household poverty status. The results are subdivided into two; employment characteristics and household factors as depicted in sections below:

4.2.1 Employment characteristics

In this section we analyze the determinants of poverty status from occupation status and sectors work. This can help in particular to understand why some households are better able to reduce their poverty status than others while engaging in different occupational activities (wage farm, wage non-farm VUP scheme independent farmers, unpaid family workers, independent non farmer, nonfarm family unpaid worker and other nonpaid apprentice).

From the analysis, the results indicates that some of the variables which accounts for increase in poverty status include working in VUP, non farm family unpaid workers and other nonpaid apprentices. The results from the study indicate that one unit increase chance of an individual working in wage farm is associated with 4% less likely to be extremely poor, 2% less likely to be poor and 6% more likely to be non-poor.

Similarly, someone working in wage non-farm is 8% less likely to be extremely poor, 4% less likely to be poor and 9% more likely to be non poor. The probability of participation in wage non-farm employment significantly decreases the household head to be extremely poor, poor and increases the likelihood to be non poor. This is consistent with theory and intuition that as household heads engage in various off-farm jobs they become more likely to generate income that can improve their livelihood and escape from poverty.

Those working in VUP scheme are 0.7% more likely to be extremely poor, 0.2% more likely to be poor and 0.1% less likely to be non poor. One unit increase in odds for independent farmers are more has 3% less likely to be extremely poor, 1% less likely to be poor and 4% more likely to be non poor. A unit increase for nonfarm unpaid family worker is 4% more likely to be extremely poor, 2% more likely to be poor and 5% less likely to be non poor. Regarding to other nonpaid operations, the study indicates that 1 unit increase in odds will

lead to 5% more likely to be poor, 2% more likely to be poor and 7% less likely to be non poor.

The sector of employment such as working in public, parastatal, private formal, private informal, nongovernmental organizations, and being permanently employed were also analyzed to assess their effects on poverty status. From the results in the Table 2 above, sector of employment does not show the results as expected. It was anticipated that the odd values would have a negative sign which means that household working in these sectors would reduce the likelihood of being poor. The study indicates that only working in private formal reduces the likelihood of being in poverty. However the relationship was not significant at 5%. This implies that although the sector of work shows contradicting evidence, there is no enough evidence to justify that indeed this is true. This might have been resulted from nature of the collected household data and also the complexity in defining the sector of work.

4.2.2. Household characteristics

Education plays a critical role in categorizing individuals along the poverty status. The education variables include: household not educated, having primary education, secondary level of education, vocational education and higher level of education. This is crucial because employment mainly depends on the education qualification of an individual. We see that all level of education reduces the chances of the household head being poor. The study indicates that an increase of 1 unit of odds that someone is not educated is associated with 5% increase in being extremely poor, 2% likely to be poor and 6% less likely to be non-poor.

Households with primary education significantly lower probability of being in extreme poverty by 8%, 4% for being poor and increases the probability of being non-poor by 13%. The secondary level of education reduces the probability of household head being extremely

poor by 5%, poor by 3% and increases the probability of being non poor by 8%. The same finding also applies to the household heads with vocational and higher education holding other factors constant. This may be because educated household heads are more productive after undergoing through different level of education, enabling them to participate in various income generation activities that can help them to earn a living. Educated heads also send their sons and daughters to school, thus transfer the knowledge to their family members hence increasing the knowledge in various development aspects such as access to micro finance, health insurance and general public health. That is the reason why the magnitude of reducing poverty while the household head has primary education is higher compared to secondary and vocational level. This implies that primary education for the poor households is a prerequisite to access basic requirements.

The study also assesses the effects socio-economic factors on poverty status of the household the results indicates that status of the household was not significant in predicting the poverty status of the household. Nevertheless, household married monogamously reduces the probability of being extremely poor by 1.6%, being poor by 0.5% and increases the probability of being non poor at 2.3%. Similarly, single household head status decrease the probability of being extremely poor by 5%, poor by 2% and increases the probability of non poor by 7% other things held constant.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATIONS

5.1. Summary

This chapter presents the overall summary of the study on the effects of employment on poverty reduction in Rwanda. Assessment of poverty level is a multidisciplinary area which touches on various predictive variables and therefore the researcher used an ordered logit model to ascertain the relationships between different associated variables. It has been observed other things equal, that the labour force participation of the household heads in wage non-farm activities is strongly negatively related to poverty because earnings in labour market are the main source of income for the poor. However, participation in labour force is not a guarantee for not being poor when working in low productivity occupations. What needs here is more quality investment to generate jobs and strengthening the quality of labour force. This will result in a healthy labour supply, which is one of the most important factors of economic productivity that increased real wages and in turn reduces poverty.

NISR survey (2015) focusing on poverty as measured in Rwanda, this study sought to assess the relationship between different predictor variables like education level of the respondents, gender, marital status, occupation and their respective sector of work. The study established that an individual who has no education is likely to be extremely poor. Additionally, there is no likelihood for female headed household to be generalized as vulnerable to extreme poverty in this case. Similarly, the coefficient of someone working in VUP scheme is negatively correlated to extreme poverty which means that the household head working in VUP Scheme is more likely to reduce her/his chances of falling under extreme poverty. VUP is a socio-economic support program which focuses on demographic characteristics of the poorest

population eligible for assistance which is expected to validate the initial subjective ranking of household welfare through "Ubudehe". The assistance is given in kind for those who are vulnerable or through job allocations for those who are able to work and earn small amount of payment.

5.2. Conclusion

5.2.1 Characteristics of employment variables to poverty reduction.

Most waged farm work is in the informal sector followed by non-farm employees work in the formal sector. The majority of non-farm employees are engaged in the public sector, including parastatal companies. A few of non-farm formal sector employees are in the private sector. The vast majorities of those working in the informal sector are basically adults. The definition of the informal sector includes those working on small family farms. According to Integrated Household Living Conditions Survey (EICV4) 2013/2014, business establishments in Rwanda increased by 24.4% mainly in rural areas. In rural areas the increase was 38.1% compared to 7.3% in urban areas. During the same period, 34.5% new jobs were created by the businesses, 47.9% in rural areas compared to 22.4% in urban areas.

Education outcomes between 2011 and 2014 are also improving with net attendance in secondary education increasing from 17.8% to 23% and that for tertiary education almost doubles from 1.7% to 3%. As a result literacy has also improved from 74.9% to 77.8%. However, net attendance in primary education dropped slightly to 87.9%.

This study found out that there is a statistical significant difference between level of education and poverty reduction. The study established that an individual who has no

education is likely to be extremely poor additionally; the gender of the household is not significant in explaining poverty. However, increase in chances that someone has lower education, leads to increase in chances that person might be categorized to be extremely poor because the lower the potential to exploit resources and technology which comes along with high education, the lower the chances of having limited resources. Education is vital for boosting the productivity of human factor and making people more aware of productivities for earning a living or income generation from non-farm sources. For this reason, Bastos et al.(2009) noted that labor is by far the most important asset of the poor and increasing their education will in turn increase labor productivity and wages which ultimately will reduce their poverty. Further evidence was given b y Grootaert(1997), to confirm that there is a link between educational attainment, the income earning potential of the household and poverty. He pointed that there is a minimum level of education necessary to enhance appreciation and adoption of new technologies that can be instrumental in increasing household productivity, and thereby earn more income. The increased income will enable the households to move out of poverty.

5.2.2. Occupation status vs. poverty status

Occupation status plays a crucial role in poverty reduction. The study establishes that there are high chances for someone employed in wage farm, wage non-farm, as an independent farmers and also independent nonfarm. This implies that these occupation enable individuals to earn a leaving, and liberate themselves out of poverty. While most of this employment clearly has been in informal sector and as self-employed with organised sector losing workforce, this is also characterized by growth in low productivity industries with very little growth of wages. Thus, there is no doubt that most of this increase has been as distress employment.

However, it is also clear from the previous analysis that the growth in workforce has primarily been led by rural non-farm sector which has not only outpaced the growth rate of enterprises in urban areas but also employment. However, the growth of employment has been entirely in the unorganized or informal sector does raise the obvious questions of limits to such employment growth as well as its effect on productivity in this sector.

5.2.3. Sector of work vs. poverty status

The study reveals that a unit increase in any of the sectors of work is associated to an individual to be either more (+) likely categorized as extreme poor or poor but less (-) likely to be non poor. These sectors are characterized by formal and informal employment. However, informal employment represents a large share of the population employed in Rwanda. Moreover, informal employment is, on average, precarious, low-paid, and risky. Therefore, understanding the links between informal employment, poverty, and human development are critical for formulating policy.

5.2.4. Level of education Vs. poverty status

The study established that education plays a vital role in improving the living standard of the people in Rwanda. For instance, the statistics of a female head household with secondary level of education and have separated from her partner may end up living in low living standard because of different predictive variables. First of all, she will be forced to work in private informal sector due to their low qualification skills requirement. These jobs mostly pays them little amount of money which cannot be sustainable. If at all, this person has big number of dependents like many children, she will carry the burden of taking care of the kids alone hence ending up spending every little amount she earns from job in meeting other household expenses.

This implies that someone who has secondary level of education can work in wage non-farm and liberate him/herself from poverty. In other words someone who has attained secondary level of education must have undergone at least basic education and have acquired enough skills which will enable her to identify opportunities and develop strategies to tap into different ventures.

The study reveals that an additional unit in vocational education is able to reduce the chances of an individual living in poverty. This means that vocational training in Rwanda plays a vital role in liberating majority of the people from poverty particularly through empowerment and skilsl development. The acquired skills in vocational training enable them to become competitive on labour market as well as empowering them to become self employed.. It also creates other avenues of job creation and therefore increasing the employment rate for poor households in Rwanda.

Someone with higher level of education has a potential to seek for a job which pays higher real wages. However, they also have a wide range of choices to make because of their technical expertise and compete on wider labour market.

5.3 Conclusion

According to (Krugman 1994), as well as wages, labour productivity is an important factor for investment, a key resource for growth and competition. Labour productivity has a significant role in poverty reduction for two reasons: First, productivity improvement benefits the poor directly by increasing agricultural yields from family businesses and raising the earnings of workers (Datt and Ravallion 1998). Second, it can reduce the prices of goods, which benefits both rural and urban poor. Thus, Rwanda needs employment paying decent wages to raise people's quality of life.

From the research, it was observed that majority of people especially in rural areas engage in private informal sector. Majority of them participate in either wage nonfarm or wage farm. The statistics in the models have consistently indicated in one point or another that there is a positive correlation between either wage farm jobs or wage nonfarm jobs with poverty status. This means that any increase in this occupation leads to the increase in poverty level. This can be attributed to two things: either the people who engages in wage farm activities practice subsistence farming methods; or people who are in wage nonfarm lack the capacity and support to grow as well. Being independent in either as farmer or non farmer reduces the probability of the household being in extreme poverty and poverty per se. Also, education level decreases the probability of the household being poor for primary, secondary higher education and vocational education.

The gender of the household head has no influence on poverty status. While for marital status of the household head, only being married monogamously and single reduce the likelihood for the household to fall in poverty. As far as the sector of employment is concerned, the private formal reduces the likelihood of being poor. This confirms the

hypothesis that household characteristics and employment variables has a significant role in explaining poverty status of the household.

The analysis presented above enables policy makers to clearly see the effect of various household characteristics and employment variables to poverty status in Rwanda.

5.4 Recommendations

This study examined the role of employment for poverty reduction in Rwanda. After analyzing the household characteristics and other employment variables, the analysis showed a series of variables that are positively correlated with the probability of being poor or extremely poor. This includes: access to VUP schemes, early marriage without formalities whereby someone finishes secondary school and informally put up with their partners, working in a wage farm, private informal, independent farmer. From the above findings, we can formulate the following recommendations:

First of all, in as much as the government would like to support the poor by providing them with VUP schemes, measures should be put in place to monitor their progress in order to avoid over dependency on such schemes. You find that people tend to relax from trying to liberate themselves from poverty because they know that the government will provides them with tokens at the end of the day. There is need to review the process and ways of tracking the progress on social protection support.

The government should also come up with measure to prohibit early marriages especially after finishing secondary school because such unions do not last for long hence living either partner especially female into poverty.

The government through the Ministry of Agriculture and Rwanda Agricultural Board should come up with programmes to sensitize farmers on proper farming methods in order to avoid the traditional subsistence farming methods. Majority of the farmers especially in rural areas still rely on rain-fed crops which can be adversely affected by weather related shocks which can change substantial income variability translation into consumption shortfall.

For those who engage in wage nonfarm, vocational schools needs to be equipped with proper resources to allow the learners to tap from modern innovation brought forth by technological changes in the global world. More funds need to be allocated for such technical schools in order to allow efficient transfer of knowledge and skills to learners. However, regulatory bodies need to reduce the amount of regulation which inhibits the development of start-up businesses in Rwanda as incentives for the poor populations to create productive employment. There is a need for Government to invest in human capital in the rural areas, educate and create awareness on the benefits of embracing Vocational skills training. In addition, Government has to facilitate the poor household to access to finance.

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ANNEXE: ESTIMATION OUTPUTS FOR EMPLOYMENT AND POVERTY STATUS

```
. use "C:\Users\Bunduskie\Desktop\Janet 22222.revised.dta", clear

. ologit POVERTY Wage_farm Wage_nonfarm VUP_scheme Independent_farmer Unpaid_family_worker Non_farm_family_unpaid_worker Othe
> r_nonpaid_apprentice Public Parastatal Private_ormal Private_informal NGO_local Dont_know Permanently_employed Not_educ Pri
> mary_educ Secondary_educ Vocational_educ Higher_educ Gender Married_MM Married_Poli Living_together Divorced Single, or

Iteration 0:   log likelihood = -68110.892
Iteration 1:   log likelihood = -66979.879
Iteration 2:   log likelihood = -66942.605
Iteration 3:   log likelihood = -66939.568
Iteration 4:   log likelihood = -66939.544
Iteration 5:   log likelihood = -66939.544

Ordered logistic regression                     Number of obs   =      68398
                                                LR chi2(25)     =    2342.70
                                                Prob > chi2     =     0.0000
Log likelihood = -66939.544                     Pseudo R2       =     0.0172
```

POVERTY	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Wage_farm	1.111547	.1993599	0.59	0.555	.7820989	1.57977
Wage_nonfarm	1.471161	.2628278	2.16	0.031	1.03655	2.087999
VUP_scheme	.8529075	.0705309	-1.92	0.054	.7252907	1.002979
Independent_farmer	1.071581	.0407901	1.82	0.069	.994543	1.154586
Unpaid_family_worker	1.144201	.0430068	3.58	0.000	1.062939	1.231675
Non_farm_family_unpaid_worker	1.095064	.0725966	1.37	0.171	.9616332	1.247008
Other_nonpaid_apprentice	1.212305	.1680562	1.39	0.165	.9238766	1.59078
Public	.6174492	.1157278	-2.57	0.010	.4276235	.8915402
Parastatal	.7129895	.1399632	-1.72	0.085	.4852754	1.047558
Private_ormal	.7448388	.1358157	-1.62	0.106	.5210173	1.064811
Private_informal	.7991669	.1426012	-1.26	0.209	.5633151	1.133766
NGO_local	.7954596	.1999584	-0.91	0.363	.4860127	1.301933
Dont_know	.5851649	.2258381	-1.39	0.165	.2746415	1.246782
Permanently_employed	.9064727	.0309924	-2.87	0.004	.8477193	.9692982
Not_educ	1.287846	.0205658	15.84	0.000	1.248163	1.328792
Primary_educ	1.718019	.1390452	6.69	0.000	1.466011	2.013347
Secondary_educ	1.408476	.123968	3.89	0.000	1.185305	1.673665
Vocational_educ	1.71806	.3997913	2.33	0.020	1.08884	2.710892
Higher_educ	17.77137	4.993328	10.24	0.000	10.24598	30.82394
Gender	.9659229	.0144171	-2.32	0.020	.9380753	.9945973
Married_MM	1.120218	.0217842	5.84	0.000	1.078325	1.163739
Married_Poli	.7216464	.04741	-4.97	0.000	.6344583	.8208162
Living_together	.7641097	.0252889	-8.13	0.000	.7161176	.815318
Divorced	.0797755	.0358374	-5.63	0.000	.033074	.1924212
Single	1.389141	.0251916	18.12	0.000	1.340633	1.439403
/cut1	-.8969253	.0315428			-.9587481	-.8351025
/cut2	.0716212	.0313186			.0102378	.1330046

```
. mfx, predict (outcome (1))

Marginal effects after ologit
      y  = Pr(POVERTY==1) (predict, outcome (1))
         =    .2303462
```

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
Wage_f~m*	-.0183903	.03058	-0.60	0.548	-.078327	.041546	.165926
Wage_n~m*	-.0635369	.02714	-2.34	0.019	-.116739	-.010334	.157051
VUP_sc~e*	.0293863	.01588	1.85	0.064	-.001738	.060511	.008553
Indepe..*	-.0121288	.00661	-1.84	0.066	-.025079	.000822	.220679
Unpaid~r*	-.0233802	.00638	-3.66	0.000	-.035892	-.010869	.211995
Non_fa~r*	-.0157157	.01119	-1.40	0.160	-.037652	.00622	.014196
Other_~e*	-.0323627	.02203	-1.47	0.142	-.075536	.010811	.002866
Public*	.0958094	.04098	2.34	0.019	.015482	.176137	.015234
Parast~l*	.0652225	.04078	1.60	0.110	-.014706	.145151	.008363
P~_ormal*	.0560195	.03696	1.52	0.130	-.016413	.128452	.033919
P~formal*	.0408802	.03343	1.22	0.221	-.024638	.106399	.261221
NGO_lo~l*	.0430288	.04992	0.86	0.389	-.054803	.140861	.001784
Dont_k~w*	.1080276	.08639	1.25	0.211	-.061291	.277346	.000482
Perman~d*	.017508	.00613	2.86	0.004	.005493	.029523	.391532
Not_educ*	-.0459511	.00297	-15.47	0.000	-.051771	-.040131	.682593
Primar~c*	-.0839378	.01079	-7.78	0.000	-.105095	-.06278	.070601
Second~c*	-.0556797	.01302	-4.28	0.000	-.081195	-.030165	.052019
Vocati~c*	-.0820445	.02944	-2.79	0.005	-.139754	-.024335	.001974
Higher~c*	-.2177228	.00498	-43.75	0.000	-.227477	-.207969	.008451
Gender	.0061468	.00265	2.32	0.020	.00096	.011333	1.52499
Marrie~M*	-.0197783	.00333	-5.94	0.000	-.026303	-.013254	.218559
Marrie~i*	.0626841	.01357	4.62	0.000	.036094	.089274	.012179
Living~r*	.050743	.00661	7.68	0.000	.037792	.063694	.052662
Divorced*	.5592109	.0747	7.49	0.000	.412807	.705614	.000453
Single*	-.0561756	.00298	-18.82	0.000	-.062025	-.050326	.298357

(*) dy/dx is for discrete change of dummy variable from 0 to 1

```
. mfx, predict (outcome (2))

Marginal effects after ologit
      y  = Pr(POVERTY==2) (predict, outcome (2))
         =  .21047968
```

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
Wage_f~m*	-.0075551	.01319	-0.57	0.567	-.033412	.018302	.165926
Wage_n~m*	-.0294837	.01463	-2.01	0.044	-.058164	-.000803	.157051
VUP_sc~e*	.010117	.00476	2.13	0.034	.000786	.019448	.008553
Indepe..*	-.0048708	.00273	-1.79	0.074	-.010218	.000477	.220679
Unpaid~r*	-.0096485	.00278	-3.47	0.001	-.015096	-.004201	.211995
Non_fa~r*	-.0065386	.00495	-1.32	0.186	-.016239	.003162	.014196
Other_~e*	-.014421	.01108	-1.30	0.193	-.036139	.007297	.002866
Public*	.0241493	.00524	4.61	0.000	.013884	.034414	.015234
Parast~l*	.0190417	.00818	2.33	0.020	.003011	.035073	.008363
P~_ormal*	.0173102	.00859	2.02	0.044	.000482	.034138	.033919
P~formal*	.0146364	.01089	1.34	0.179	-.006703	.035976	.261221
NGO_lo~l*	.0139	.01293	1.08	0.282	-.011437	.039237	.001784
Dont_k~w*	.025113	.008	3.14	0.002	.009428	.040797	.000482
Perman~d*	.0067219	.00231	2.90	0.004	.002185	.011259	.391532
Not_educ*	-.0166336	.00102	-16.38	0.000	-.018624	-.014643	.682593
Primar~c*	-.0434917	.00708	-6.14	0.000	-.057369	-.029615	.070601
Second~c*	-.0265738	.00741	-3.59	0.000	-.0411	-.012048	.052019
Vocati~c*	-.0442803	.02076	-2.13	0.033	-.084978	-.003583	.001974
Higher~c*	-.1856289	.00715	-25.95	0.000	-.199648	-.171609	.008451
Gender	.0023997	.00103	2.32	0.020	.000374	.004425	1.52499
Marrie~M*	-.0080853	.00143	-5.67	0.000	-.010879	-.005292	.218559
Marrie~i*	.0185656	.00284	6.54	0.000	.012997	.024134	.012179
Living~r*	.0161867	.00168	9.65	0.000	.0129	.019473	.052662
Divorced*	-.0917437	.03718	-2.47	0.014	-.164614	-.018873	.000453
Single*	-.0239571	.00141	-17.02	0.000	-.026716	-.021198	.298357

(*) dy/dx is for discrete change of dummy variable from 0 to 1

```
. mfx, predict (outcome (3))

Marginal effects after ologit
      y  = Pr(POVERTY==3) (predict, outcome (3))
         =  .55917412
```

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
Wage_f~m*	.0259454	.04377	0.59	0.553	-.059844	.111735	.165926
Wage_n~m*	.0930205	.04177	2.23	0.026	.01116	.174882	.157051
VUP_sc~e*	-.0395033	.02064	-1.91	0.056	-.079954	.000947	.008553
Indepe..*	.0169995	.00934	1.82	0.069	-.001297	.035296	.220679
Unpaid~r*	.0330288	.00916	3.61	0.000	.015075	.050983	.211995
Non_fa~r*	.0222543	.01614	1.38	0.168	-.009381	.053889	.014196
Other_~e*	.0467837	.03311	1.41	0.158	-.018105	.111673	.002866
Public*	-.1199587	.04621	-2.60	0.009	-.210528	-.02939	.015234
Parast~l*	-.0842641	.04895	-1.72	0.085	-.180211	.011683	.008363
P~_ormal*	-.0733296	.04554	-1.61	0.107	-.162579	.01592	.033919
P~formal*	-.0555166	.04431	-1.25	0.210	-.142367	.031333	.261221
NGO_lo~l*	-.0569288	.06284	-0.91	0.365	-.180094	.066236	.001784
Dont_k~w*	-.1331405	.09438	-1.41	0.158	-.31812	.051839	.000482
Perman~d*	-.0242299	.00844	-2.87	0.004	-.040779	-.007681	.391532
Not_educ*	.0625847	.00396	15.81	0.000	.054828	.070341	.682593
Primar~c*	.1274295	.01786	7.14	0.000	.092432	.162427	.070601
Second~c*	.0822535	.02042	4.03	0.000	.042227	.12228	.052019
Vocati~c*	.1263248	.0502	2.52	0.012	.02793	.224719	.001974
Higher~c*	.4033518	.01188	33.95	0.000	.380064	.426639	.008451
Gender	-.0085464	.00368	-2.32	0.020	-.015757	-.001335	1.52499
Marrie~M*	.0278636	.00475	5.87	0.000	.018553	.037174	.218559
Marrie~i*	-.0812497	.01639	-4.96	0.000	-.113378	-.049121	.012179
Living~r*	-.0669297	.00827	-8.10	0.000	-.083132	-.050728	.052662
Divorced*	-.4674671	.03756	-12.45	0.000	-.541087	-.393848	.000453
Single*	.0801327	.00436	18.39	0.000	.071592	.088674	.298357

(*) dy/dx is for discrete change of dummy variable from 0 to 1