THE CHANNELS OF POVERTY REDUCTION IN MALAWI: A DISTRICT LEVEL ANALYSIS

BY

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Submitted in accordance with the requirements for the degree

PHILOSOPHIAE DOCTOR

In

Economics at the

NORTH-WEST UNIVERSITY

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Vanderbijlpark

April 2014

ACKNOWLEDGEMENTS

I thank God the almighty for giving me the life, strength and opportunity to carry out this study. Without Him none of this could have been possible. I am greatly indebted to Him.

I am greatly thankful to God for a loving wife, Hannah Mayamiko Dunga, who stood by my side throughout the course of this study, she even gave me a gift of a baby boy Adonai in the same period, what more could a man ask for, "may God bless you my friend." I am also deeply grateful to my daughter Samantha who had to deal with my work pressure, waking up early to be dropped at school so that dad can be at work in time.

I am very thankful to my promoters Dr T.J Sekhampu and Dr M. B. Sekatane for the guidance throughout the whole process. "You guys helped me both academically and emotionally." All the colleagues in the School of Economic Science, you were like a family, I could not have a better environment than the one you guys created. Am also indebted to my friend and Mesho Dr B. H. M. Tchereni for linking me up with NWU, and for his friendship during the study period.

Many thanks to the NWU Vaal Triangle campus for providing me with the finances, the support and the space that enabled the study to be successful. Finally my thanks go to the National Statistical Office (NSO) for allowing me to use the data which they worked for months to collect. May God bless you each and every one of you.

DEDICATION

This research output is dedicated to my wife Hannah, daughter Samantha and son Adonai. I love you guys!

DECLARATION

I declare that this thesis titled

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is my own work and the all the resources used or quoted have been duly acknowledged by means of in-text citations and complete references, and that I have not previously submitted the thesis for degree purposes at another university

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Steven Henry Dunga

ABSTRACT

The study investigated on the channels of poverty reduction in Malawi, using household data aggregated at district level. Malawi is divided into 31 districts with different demographics and opportunities. Macro level data which was calculated in terms of district percentages were used in the study. The study emanated from the premise of the link between economic growth and poverty reduction. With the trend of growth that was seen in Malawi from 2004 to 2012; there was an interest to further investigate if there had been any significant change in the poverty levels as measured in the country by the National Statistical office. The objectives of the study were two pronged; the theoretical and the imperial. The theoretical objectives were; to provide a background of Malawi, to review the literature on poverty theories, to review the literature on the link between poverty reduction and the channels of potential impact, namely: economic growth, education attainment, access to loans and enterprises, agricultural production, population growth and employment or unemployment.

The empirical objectives on the other hand were; to investigate if there has been any poverty reduction in the years 1998 to 2012 in Malawi, to assess how economic growth at a district level proxied by agriculture production and land holding affect poverty at district level in Malawi, to assess how education attainment affect poverty reduction at a district level in Malawi, conduct an analysis on how employment or unemployment affect poverty reduction at a district level. Also investigate the relationship between access to loan and poverty reduction in Malawi and to determine if different poverty measures exhibit statistically significant different responses to channels under investigation namely economic growth, education levels, population growth and access to loans at district level.

The study employed descriptive and regression analysis to arrive at the results for the set empirical objectives. Due to the fact that panel data was used for districts, a random effects regression model was used for the estimations. A Breusch-Pagan test was used to decide on random effects as opposed to fixed effects model. The results from the regressions showed that all the channels that were hypothesised to be of importance, came out significant from objective based regressions. These

regressions were run separately for each channel, with the district poverty rate as a dependent variable.

The study found the considered channels of poverty reduction to be significant at different levels. First, it was established that there has been significant growth in Malawi. This growth however was seen to be erratic where in other years it was higher and in other years lower. A more important conclusion from the first objective was that there had been poverty reduction in the country between 1998 and 2012. A t test was also used for mean difference in the years where Integrated Household surveys were conducted namely, 1998, 2004 and 2012. The t-test showed a statistically significant reduction in poverty between 1998 and 2012 of up to 15.07.

The study also found that the relationship between agricultural production and poverty was significant especially looking at local maize production which had a negative significant coefficient. Implying that, an increase in agricultural production has an associated reduction in the district poverty rate. It was also established from the results that input subsidy had a significant impact on poverty at district level. This input programme which helps poor households to access fertilizer at a highly subsidised price had a negative relationship with poverty that was significant. This shows that government's effort in funding the national wide fertilizer subsidy has some bearing on the poverty level of the country.

On the relationship between education and poverty reduction, the study also found a significant relationship. This was clear on the impact of literacy rate on poverty reduction. The regression results showed a significant negative relationship between literacy rate and poverty reduction.

The channels of employment in poverty reduction was found to be significant but in a direction unexpected. Labour force participation had a positive influence on poverty rate at district level. A number of things were discovered; first the employment rate as reported in the statistical year book is misleading. What is considered employment in these statistics is basically subsistence farmers who take up more than 80% of the employment rate. Second, most of what is recorded as employment is non-skill labour with people without education recoding a 99% employment rate.

This is a misleading record in as far as what employment for poverty reduction is concerned. It is therefore not a surprise that, most of the people reported as employed are also found below the poverty line some even below the ultra-poverty line.

A special contribution resulting from the study is the framework on the interconnection between the channels. The study points out the fact that for agricultural production to thrive there is need for education. Also for agricultural production to succeed there is need for the farmers to have access to loans. the study discovered that more than 45 percept of the loans people obtained were for agricultural inputs. There is also a link between education and employment, education and access to loans and access to loans and employment through business start-ups that create employment.

The conclusion of the study is that policies that are intended to reduce poverty should be aimed at promoting education participation. There is also need to create an environment that enables the poor to access loans and credits at a reasonable interest rate. The government should continue with the input subsidy programme for the poor household. There is need for the national statistical office to reconsider the definition of employment so that the government works with practical figures, other than the inflated employment rates that are reported in the statistical year book.

Key words: Poverty reduction, economic growth, district, Malawi, agricultural production, education, employment, access to loans

OPSOMMING

Hierdie studie ondersoek die kanale vir armoedevermindering in Malawi, met die fokus op distrikvlak. Malawi bestaan uit 31 distrikte, elk met sy eie demografie en geleenthede. Hierdie studie het dus van makrovlakdata gebruik gemaak wat in terme van distrikpersentasies bereken is. Die studie vloei voort uit die veronderstelling dat daar 'n verband tussen ekonomiese groei en armoedevermindering is. Die groeitendens wat tussen 2005 en 2010 in Malawi sigbaar was, maak dit verder van belang om ondersoek in te stel of daar enige beduidende verandering in die vlak van armoede in die land was, soos gemeet deur die Nasionale Statistiese Kantoor. Die doelwitte van hierdie studie is tweeledig: teoreties en empiries. Die teoretiese doelwitte is soos volg: om 'n agtergrond van Malawi te voorsien; om 'n oorsig te bied van literatuur oor armoedeteorieë; en om 'n oorsig te bied van literatuur oor die verband tussen armoede (-vermindering) en die kanale van potensiële impak, naamlik ekonomiese groei, opvoedingsvlakke, BDI verteenwoordig deur toegang tot lenings en ondernemings, landbouproduksie, bevolkingsgroei en indiensneming/werkloosheid.

Die empiriese doelwitte kan soos volg geformuleer word: om te ondersoek of daar enige vermindering in armoede tussen 1990 tot 2012 in Malawi was; om te assesseer hoe ekonomiese groei op distrikvlak (verteenwoordig deur landbouproduksie en eiendomsbesit) armoede op distrikvlak in Malawi beïnvloed; om te assesseer hoe opvoedingsvlakke armoede op distrikvlak in Malawi beïnvloed; om te analiseer hoe indiensneming of werkloosheid armoede op distrikvlak in Malawi beïnvloed; om die verhouding tussen toegang tot lenings en armoedevermindering in Malawi te ondersoek; en om vas te stel of verskillende armoedemaatstawwe 'n statisties beduidend verskillende respons het op die kanale wat ondersoek word, naamlik ekonomiese groei, opvoedingsvlakke, bevolkingsgroei en toegang tot lenings op distrikvlak.

Die studie het van beskrywings en regressie-ontleding gebruik gemaak om antwoorde op die vrae wat in die empiriese doelwitte gestel is, te bereik. As gevolg van die feit dat paneeldata vir distrikte in die jare 2004 en 2010 gebruik is, is 'n ewekansige effekte-regressiemodel op beramings toegepas. Volgens die resultate

van doelgebaseerde regressies blyk al die kanale wat volgens die hipotese van belang is om beduidend te wees. Hierdie regressies is afsonderlik vir elke kanaal uitgevoer met die distrikarmoedekoers as die afhanklike veranderlike.

Die studie het bevind dat die veronderstelde kanale vir armoedevermindering beduidend op verskillende vlakke is. Die eerste vlak is bepaal volgens doelwit nommer een, dat daar beduidende groei oor die afgelope twee dekades in Malawi plaasgevind het. Hierdie groei is egter wisselvallig; hoër in party jare en laer in ander. 'n Belangrike gevolgtrekking wat uit hierdie eerste doelwit gemaak kan word, is dat die afgelope twee dekades ook gepaard gegaan het met 'n vermindering van armoede in die land. Die data het van uitgesoekte tydstippe, naamlik 1998, 2004 en 2012 gebruik gemaak omdat uitgebreide studies in hierdie jare belangrike data beskikbaar gestel het.

Die ander gevolgtrekkings wat uit hierdie studie gemaak kan word, is die kanale vir armoedevermindering soos gestel in doelwitte 2 tot 6. Die studie het 'n beduidende verhouding tussen landbouproduksie en armoede bevind, veral ten opsigte van die plaaslike produksie van mieliegewasse wat 'n negatiewe beduidende koeffisiënt toon. In die meervoudige regressies het 'n kunsmissubsidie ook 'n beduidend negatiewe verhouding met armoede getoon. Dit dui op 'n verband tussen die regering se poging om die kunsmissubsidie landwyd te befonds en armoede in die land.

Met betrekking tot die doelwit van opvoeding as kanaal om armoede te verminder, het die studie ook 'n beduidende verhouding bevind. Dit is veral duidelik uit die impak van die geletterdheidsvlak op armoedevermindering. Die resultate van die regressie het 'n beduidend negatiewe verhouding tussen geletterdheid en armoedevermindering getoon.

Indiensneming as kanaal vir armoedevermindering was ook beduidend, maar op 'n onverwagte manier. Die studie het bevind dat arbeidsmagdeelname 'n positiewe uitwerking op die armoedekoers op distrikvlak het. In hierdie opsig is 'n aantal punte ontdek. Eerstens is die indiensnemingskoers soos dit in die statistiese jaarboek weergegee word, misleidend. Die statistieke in hierdie jaarboek beskou

indiensneming basies as stukwerk waarvoor arbeiders baie min geld verdien. In die meeste gevalle werk hierdie mense op plase wat aan ander kleinboere behoort en word hulle soms in goedere soos voedsel betaal. Wanneer hulle kontant betaal word, is dit onder die land se minimumloon. Tweedens kan die meeste van dit wat as indiensneming aangeteken word, eerder as ongeskoolde arbeid beskou word. Daar word 'n 99%-indiensnemingskoers onder mense sonder 'n opvoeding aangeteken. Wat armoedevermindering betref, is dit 'n misleidende verslag. Om hierdie rede is dit geen verrassing nie dat die meeste van die mense wat volgens hierdie verslag werksaam is, ook onder die broodlyn en selfs onder die ultra-broodlyn leef.

'n Besondere bydrae wat uit hierdie studie spruit, is die raamwerk vir die onderlinge verband tussen die kanale. Die studie wys daarop dat opvoeding noodsaaklik is vir landbouproduksie om wel te vaar. Verder hang suksesvolle landbouproduksie daarvan af dat boere toegang tot lenings het. Die studie het bevind dat 45 persent van lenings wat bekom is vir landbou-insette aangewend is. Daar bestaan ook 'n verband tussen opvoeding en indiensneming, opvoeding en toegang tot lenings en toegang tot lenings en indiensneming deur middel van beginbesighede wat werkgeleenthede skep.

Die gevolgtrekking van die studie is dat beleide wat opgestel is om armoede te verminder, daarop gerig moet wees om opvoedingsdeelname te bevorder. Daar is ook die behoefte om 'n omgewing te skep wat arm mense in staat stel om toegang tot lenings en krediet teen 'n redelike rentekoers te verkry. Verder moet die regering voortgaan met die inset-subsidieprogram vir arm huishoudings. Die nasionale statistiese kantoor moet ook hulle definisie van indiensneming hersien sodat die regering met praktiese syfers kan werk en nie die opgeblase koerse in die statistiese jaarboek nie.

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Sleutelwoorde: Armoede, ekonomiese groei, distrik, Malawi, landbou, produksie, opvoeding, indiensneming, lenings

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

CGIAR	Consultative Group on International Agricultural Research
DGP	Gross Domestic product
DFID	Department for International development
DC	District Commissioner
DPP	Democratic progressive Party
EC	European Commission
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FEM	Fixed Effects Model
FGT	Foster, Greer and Thorbecke
GoM	Government of Malawi
HDI	Human Development Index
HPI	Human Poverty Index
IHS	Integrated Household Survey
ILO	International labour office
IMF	International Monetary Fund
JC	Junior Certificate
MDGs	Millennium Development Goals
MSCE	Malawi School Certificate Examinations

MNFPL   mean non-food poverty line

NGT   New growth Theory

NHDI   New Human Development Index

NSO   National Statistics office

OECD   Organization for Economic Cooperation and Development

PSLC   Primary school leaving Certificate

PP   Peoples Party

REM   Random Effects Model

SPG   Squared Poverty Gap

SPSS   Statistical package for Social Sciences

RBM   Reserve Bank of Malawi

UK   United Kingdom

UN   United Nations

UDF   United Democratic Front

UP   United party

UNDP   United Nations Development Program

UNESCO   United Nations Educational, Scientific and Cultural Organization

UNECA   United Nations Economic commission for Africa

UNICEF   United Nations Children's Fund

USA   United States of America

USAID   United States Agency for International Development

WB   World Bank

WEF   World Economic Forum

WHO   World Health Organization

CHAPTER 1   THE PROBLEM AND ITS SETTING

1.1   INTRODUCTION

Poverty is one of the major problems that countries all over the world are trying to deal with. For years countries around the world championed by the United Nations have put together their effort to fight against poverty, with emphasis focused on eradicating by half, the number of people living in extreme poverty by 2015 (United nations, 2010:1). In Its manifestation, poverty is related to most of the ills being faced in the world, like war, diseases and crime especially in developing countries. Developed countries including the very rich ones also face problems related to poverty. These problems could be in small pockets of poverty stricken societies that easily indulge in crimes like the London Strikes of 2011(Smith *et al.* 2011) or through issues of immigrants who do not have the proper requisites to participate in economic activities and hence remain unemployed and poor, and exert pressure on the social services (Chimombo, 2005:155; Hayne & Michelle, 2004:302). The extent of poverty has reached alarming levels in recent years. Stark (2009:381) pointed out that the number of poor people reached 969 million in 2004 and has increased by over 100 million according to World Bank (2008:1). Robert McNamara who was the world bank president in 2008, clearly put it that "the poor are living in a condition of life so characterized by malnutrition, illiteracy, disease, squalid surroundings, high infant mortality and low life expectancy as to be beneath any reasonable definition of human decency (Stark, 2009:382)

The need to deal with poverty in all its forms is ubiquitous in most of the programs being initiated and implemented by multilateral organisations, such as the World Bank, European Commission, and United Nations Development Programme, among others (UNDP, 1999:1; 2001:2; 2005:1; 2008:2, World Bank, 2010:2). In the same effort developed countries feel obliged to act in a way that is consistent with concerns over poverty and how to reduce or eradicate it. Both developing and least developed countries have most of their policies and programs focused on how to

reduce poverty especially abject poverty which is the extreme form of deprivation (Dollar & Kraay 2000:1; 2001:2, GoM 2010:1; Kanyenze, 2005:1).

In terms of definition, poverty is understood as a multidimensional concept with no single definition and hence there can never be one solution (Sachs, 2005:3; NSO, 2012:203). Although some researchers (Prince, 2009:4; Mussa, 2011:2; Desai & Shah, 1988:1; Klasen, 2008:2), still disagree on the correct measure of poverty, they however agree on the need to understand and deal with poverty in all its forms. In order to make significant strides in dealing with poverty, there is a need to have a clear understanding of what poverty is and which measure presents a succinct exposition of this seemingly complex issue.

A number of theoretical expositions relating to the causes and solutions to poverty have been made. Some studies argue that poverty is an economical phenomenon resulting from inequalities in the distribution of income (Sachs, 2005:4; UNDP, 2010:2). Others like the World Bank for example, have argued that poverty is a result of underdevelopment and underutilisation of resources (WB, 2008:1). One area that has been agreed on, in economic theory as directly related to poverty or reduction of the same is the performance of a country's economy, generally looked at as economic growth (Hanmer and Nicholas, (2009:1) and also Headey, (2011:2). There is overwhelming literature and evidence (Heshmati, 2004:1; Boozerp *et al.,* 2003:1; Dollar and Kraay, 2000:2; 2001:1; Hull, 2009:69) that support the existence of a positive relationship between economic growth and poverty reduction. Others have actually quantified the extent of poverty reduction that may result from economic growth. Dollar and Kraay (2000:1) used cross sectional data for several countries and found that income of the poor raises one for one with overall economic growth. Warner (2006:173) notes that countries that have experienced substantial growth for a sustained longer period have had an associated change in living standards of their citizens, although a few examples indicate otherwise.

That fact that growth is associated with reduction in poverty does not in itself imply that there is an automatic change in poverty as growth occurs Waener (2006: 170), Bourguignon, (2003: 6). If an automatic change was the case, then cases where

growth occurred simultaneously with rising level of poverty would not have existed. Warner (2006: 170) cites a case where contrary to popular results, there was growth associated with reduction in incomes of the lower 20 percent income bracket in Colombia between 1970 and 1991. There is a need therefore for certain conditions to exist and proper channels used in order for increases in growth to result in poverty reduction (Warner, 2006: 170).

There is evidence in literature on the link between education levels and poverty reduction, with the latter being reduced as education levels go up (Bloom *et al.,* 2006:2; Decamp, 2007:1; Becker, 1964:150; Oxaal, 1997:4). Education in itself does not reduce poverty but is a channel through which poverty is reduced (Oxaal (1997:4). Adam Smith (1776) in his famous work "Wealth of Nations", argued that education embodies skills in people and can be looked at as an investment which has a return in future like any other investment. Blaug (1970:1) echoing Smith's sentiments pointed out that this investment is either by the creation of skills that enable people to get an income or by employing the skills in a way that generates income for the individual. Other indicators which have had an impact on poverty levels include foreign direct investment. Foreign direct investment (FDI) has had a great impact on poverty levels in most of the newly Industrialised countries. The link between FDI and poverty has been cited in studies like that by Hossein and Weiss (2002:236) who found that FDI has had a great impact on poverty in the Asian countries, where they linked FDI to economic growth. There is also a link between agricultural production and poverty reduction, especially in countries like Malawi where agriculture is the main contributor to economic growth, (Chirwa *et al.,* 2008:1).

The Southern Africa region, the sub-Saharan Africa in particular has remained a poverty stricken region in the world. According to Hunger Project (2012:1), 90 percent of all children and 60 percent of all women living with HIV are in sub-Saharan Africa. Further to that, Chilonda *et al.* (2007:4), found that about 40 percent of the population in SADC lived in extreme poverty and are based in the rural areas. Efforts to move the region towards prosperity have come in different forms, ranging from economic integration to trade and educational innovations. Over the years the

region has experienced considerable economic growth with little to show in the poverty eradication front (SADC 2011:2).

1.1.1 A brief profile of Malawi

Malawi is one of the poorest of the least developed countries in the world, ranking 153 out of 169 countries on the Human Development Index for 2010 (WorldBank, 2010:1). According to World Bank figures of 2013, Malawi has a Gross Domestic Product (GDP) of around US$4.7 billion and GDP per capita of approximately US$310. The country has a high population growth rate of around 2.4 according to NSO (2010:1) Between 1997 and 2005 the country experienced modest economic growth averaging around 3 percent and also a high degree of volatility and instability in the macro- economic factors. Malawi is one of the countries in sub-Saharan Africa. The country has high levels of poverty and has had policies trending in the poverty reduction efforts for years (Chirwa *et al.,* 2008:4). The country has been praised to have experienced sustained levels of economic growth for years (Chirwa *et al.,* 2008:12; Mussa, 2011:1). Among the country's successes has been the introduction of free primary education in 1994, resulting in higher school enrolments (Chimombo, 2005:155). The country has had a remarkable flow of FDI especially to the mining sector and the agriculture sector. A number of financial lending institutions have also opened operations in the country, an indication of a flow of funds for business especially for small and medium enterprises, (Chida, 2010:6) However it is not clear whether these developments (economic growth, increased agricultural production, education, FDI) experienced over the years have had any effect on poverty in the country. A detailed profile of the country is given in chapter 4 of this study.

1.2   PROBLEM STATEMENT

The need to deal with poverty has received overwhelming attention for years in Malawi (Mussa, 2011:1). Some of the initiatives that focused on poverty reduction include the sanctioning of the Malawi Poverty Reduction Strategy Paper (MPRSP) 2002 to 2005, the Malawi growth and development strategy 2006 -2011, and the second Malawi growth and development Strategy (GoM, 2006:2; 2011:1). Research

done on poverty in Malawi has concentrated on measuring poverty and how it has changed over time. Chirwa (2004:1) looked at access to land, growth and poverty reduction using a sample of districts, and found that land holding was a significant factor for poverty reduction in the sampled districts. Chirwa *et al.* (2008) also looked at the link between agricultural growth and poverty reduction in Malawi, focusing on past performance and recent trends in Malawi. The result from Chirwa *et al.* (2008) was not significant since the data used was for the period when agricultural production was performing poorly. Mussa (2011) looked at the measures of poverty since 1998 when comprehensive poverty measures were first collected in Malawi and argued that there is a need to look at other non-monetary measures of poverty in Malawi. Mukherjee *et al.* (2003:339) researched on the determinants of poverty in Malawi and found that education level, household size, access to land for cultivation among others were important determinants of poverty at household level. Mukherjee used data from the first integrated household survey (IHS 1) collected in 1998. Since then two more country wide Integrated Household Surveys (IHS) have been conducted with the most recent released in 2012. These surveys provide a more current data set that can be used to look deep in these poverty determinants.

The literature review done for this study show that there is no study that has been done using country wide district level data to link poverty to policy developments experienced in the country since 1990. Theoretically there are a number of factors that are clearly agreed upon to have an impact on poverty. The relationship between economic growth and poverty is one of the most agreed upon by economists (Dollar & Kraay, 2000:1; Warner, 2006:173; Hull, 2009:69). However, there remains a lack of consensus on which sectors are supposed to lead in the growth process so as to achieve maximum poverty reduction (Hull, 2009b:72; Prince, 2009:2; Warner, 2006:174). The link between poverty and other factors with potential impact remains a gap in the literature in Malawi, let alone at district level (NSO, 2012: 298; Mussa, 2011:4). The gap exists because most studies like that by Mussa, (2011), Chirwa, (2004) and Chirwa *et al. (*2008) did not go beyond the growth- poverty relationship and have also concentrated on small district samples as opposed to a nationally representative sample (Mussa & Pauw, 2011:3). This study is therefore looking at

the channels of poverty reduction in Malawi at district level for the period of the three Integrated Household Surveys, namely 1998, 2004 and 2012, benefiting from a large data set from National Statistics office, especially IHS 3 which was released recently in 2012.

1.3   OBJECTIVES OF THE STUDY

The following objectives were identified and formulated for the study.

1.3.1 Primary objective

The primary aim of the study was to determine the channels of poverty reduction in Malawi at a district level.

1.3.2 Theoretical objectives

In order to achieve the primary objective, the following theoretical objectives were set:

- To provide a background of Malawi
- To review the literature on poverty theories
- To review the literature on the link between poverty (reduction) and the channels of potential impact, namely:
    - Economic growth
    - Education levels
    - FDI proxied by access to loans and enterprises
    - Agricultural production,
    - Population growth
    - Employment / unemployment

1.3.3 Empirical objectives of the study

The following empirical objectives were formulated:

- To investigate if there has been any poverty reduction in the years 1990 to 2012 in Malawi.

- To assess how economic growth at a district level (proxied by agriculture production and land holding) affect poverty at a district level in Malawi

- To assess how education levels affect poverty reduction at a district level in Malawi

- To conduct an analysis on how employment or unemployment affect poverty reduction at a district level in Malawi

- To investigate relationship between access to loan and poverty reduction in Malawi

- To determine if different poverty measures exhibit statistically significant different responses to channels under investigation namely economic growth, education levels, population growth and access to loans at district level.

1.4 RESEARCH DESIGN AND METHODOLOGY

The study comprised of a literature review and an empirical study. Quantitative research, using secondary data was conducted. The data used was collected by National Statistics Office (NSO) in Malawi for the years under consideration.

1.5 LITERATURE REVIEW

The literature review for the study have come from journal papers, research papers, conference papers, government reports and documents, relevant textbooks, newspaper articles and the Internet. In as far as issues pertaining to the study country Malawi are concerned; reports from the Integrated Household Survey (IHS) were the main source of information. Other sources like government documents and reports and studies on Malawi have also been used. There have been three IHSs produced between 1998 and 2012. These IHS reports have detailed information on poverty and welfare measures in Malawi.

1.6 EMPIRICAL STUDY

The study has benefited from the availability of a data set collected by the National Statistical Office of Malawi (NSO). These data are aggregated to different levels with national figures at the top, regional figures on the second level and district figures on the third level. The study made use of the district level figures. NSO collects data on a number of household variables. Some of the variables include household expenditure and consumption patterns, education levels of household members, enterprise profile and access to loans, and a number of welfare characteristics like health, sanitation and morbidity rate. The district poverty rate (DPR) used in this study was calculated by NSO as a headcount measure using a poverty line that was arrived at based on food and non-food expenditure of households. A detailed explanation of the calculation of the poverty line is presented in chapter 5 of this study.

1.6.1 Statistical analysis

The captured data has been analysed using STATA and Statistical Package for Social Sciences (SPSS), Version 21.0 for Windows. The following statistical methods will be used on the empirical data sets:

- Descriptive analysis
- Regression analysis and
- Significance tests

The models to be estimated will be in different levels moving from basic assumptions of ordinary Least Squares to fixed and random effects levels.

1.6.2 Empirical analysis of the study objectives

The first empirical objective has been addressed using trends, descriptives and graphs. All the other empirical objectives have been achieved by using regression analysis. The regressions considered were of the following form:

$$DPR_{it} = \beta_1 + \beta_2 X_{2it} + \cdots \beta_n X_{i=n\,t=T} + \mu_{it} \quad \ldots \quad (1)$$

Where DRP is district poverty rate (head count measure), β_1 is the model intercept and $\beta_{2\ldots n}$ are coefficients of independent variables $X_{2\ldots n}$. μ_{it} is the error term of the model. The subscript i is the cross-sectional component and the t is for the time series component, this is because the empirical analysis has used panel data across district over a number of years.

The regression models for objectives 2 to 6 have all the variables of interest included as follows:

$$DPR_{it} = \beta_1 + \beta_2 Educ_{it} + \beta_3 Agri_{it} + \beta_4 Entr_{it} + \beta_5 Popgr_{it} + \beta_6 Emply_{it} + \omega_{it} \quad \ldots \quad (2)$$

Where Educ is education level at district level, Agri is agricultural production at district level, Entr is enterprises at district level, Popgr is population growth at district level and Emply is employment rate at district level. An objective specific regression was the next step for each of the objectives 2 to 6. For example objective number three with education as a channel of impact, a regression with education levels was specified as follows:

$$DPR_{it} = \beta_1 + \beta_2 prim_{it} + \beta_3 Sec_{it} + \beta_4 Trt_{it} + \beta_5 DR +_{it} + \omega_{it} \ldots \quad (3)$$

Where prim is the percentage of those with primary education, Sec is the percentage of those with secondary education and Trt is the percentage of these with tertiary education all at district level. DR is a dummy variable for region, for the three regions in the country.

For objective 7 two regressions have been estimated with the first one having the dependent variable as district poverty rate from the head count measure and the second regression has districts ultra-poverty rate as a dependent variable as follows:

$$DPR_{it} = \beta_1 + \beta_2 X_{2it} + \cdots \beta_n X_{i=n\ t=T} + \mu_{it} \ldots \quad (4)$$

$$Ultra - DPR_{it} = \beta_1 + \beta_2 X_{2it} + \cdots \beta_n X_{i=n\ t=T} + \mu_{it} \ldots \quad (5)$$

Where DPR is the district head count poverty rate and Ultra- DPR is the district ultra-poverty rate. X_i is a vector of dependent variables which includes all the variables considered important from regressions 2 to 6. The aim of objective 7 is to find out if these measures respond differently to the channels of poverty reduction. Due to the fact that panel data has been used, the Ordinary Least Squares (OLS) regression analysis becomes inadequate; hence the random effects models were employed in the regression analysis. Chapter 5 of this study presents a detailed explanation of the models and the derivation, and points out the different aspects of the fixed effects model and the random effects model, and why the random effects model was more appropriate as opposed to the fixed effects one.

1.7   ETHICAL CONSIDERATIONS

Since the data used is from a secondary source, there will be no need to seek further permission other than that sought from the National Statistics Office. National Statistical Office of Malawi is mandated by the government of Malawi to collect data on any kind of issues national wide. These data are made available for policy and academic purposes and permission is all that is required to obtain and use the data sets. This study was permitted to use the data sets used.

1.8   LAYOUT OF THE STUDY

This study is comprised of the following chapters: Chapter 1 The problem and its setting: This chapter presents the background of the study, the problem statement, the research objectives and research questions and a brief overview of the methodology used in the study.

Chapter 2 Theoretical Literature Review: this chapter reviews the literature on poverty looking at the theories and measurements of poverty. There is also a section that discusses economic growth and links it to poverty reduction

Chapter 3 reviews the channels of poverty reduction. This is mainly looking at the linkages between poverty and economic growth, education, employment, FDI, Trade and agricultural production.

Chapter 4 details the profile of the study county (Malawi): this is a detailed profile of Malawi with focus on the economy, education, employment, population and agricultural production among other things.

Chapter 5 Research design and methodology: this chapter presents the methodology that has been used in the study. The data used and the model design employed are discussed in this chapter

Chapter 6 Results and findings: This chapter presents the results and discussions of the results in reference to the models used in chapter five.

Chapter 7 Conclusions and recommendations: This chapter presents the conclusions drawn from the study and recommendations arrived at from the results of the study.

CHAPTER 2   THEORETICAL AND EMPIRICAL LITERATURE ON THEORIES AND MEASURES OF POVERTY

2.1   INTRODUCTION

This chapter presents a review of the theories of poverty, poverty measures and perceptions on the causes of poverty. An effort is made to point out the fact that the head count as a measure is commonly used in most poverty studies, specifically in Malawi where data for this study is drawn from (NSO, 2012:205). The head count is based on different poverty lines which vary from country to country. Other measures of poverty have also been discussed in detail pointing out the various strengths and weaknesses of each measure. On the onset however, the chapter begins with a discussion of theories of economic growth. However to justify the premise that there have been changes in income, there is need to show changes in the income levels especially of the poor. Bourguignon (2003:1) for example, contended that many papers dealing with poverty focus of the effect of growth. In his argument of the importance of growth in poverty reduction, he cited studies by de Janvry and Sadoulet (1995; 2000), Ravallion and Chen (1997) and Dollar and Kraay (2000). He argues that poverty reduction studies using regression analysis point to the changes in poverty in consideration of two point of time as is explained by growth of income or GDP per capita and a number of other variables. One source of new income in a country is economic growth as pointed out by Warner, (2006:173). Where economic growth is understood as an increase in a nation's output according to Todaro *et al.* (2011:78). In echoing the importance of growth to poverty reduction, Christiaensen *et al.* (2003:319) stated that it is an accepted fact that growth is a necessary condition for sustainable poverty reduction and this was in reference to similar sentiments by Kanbur (2001:1). This link between poverty reduction and economic growth has therefore necessitated a discussion of theories of economic growth and their relationship with poverty reduction in this chapter. Theories of economic growth are discussed based on the premise that any poverty reduction strategy can only work better if there is new wealth created in a country (World Bank, 2012). In the absence of economic growth poverty reduction efforts would be the same as income

redistribution of the existing wealth. Thus, issues of redistribution become more controversial in societies that are leaning more to capitalism as opposed to socialism (Konow, 2003:1189). The last section at the end of the chapter discusses issues of equity and income distribution as related to poverty reduction. The first part of this chapter therefore discusses the theories of economic growth so as to lay out the background and make a connection with reference to the changes in the discussion of the theories over time. It should be pointed however that the core of this study is on the channels through which the new created wealth is transformed into poverty reduction. The channels considered in this study are discussed in detail in chapter three of this study, which are; education, agricultural production, access to loans and credit also referred to as enterprise and employment. The section 2.1.1 that follows introduces the issues of economic growth and the consequential relationship to poverty reduction.

2.1.1 The concept of growth in poverty reduction

Economic growth is considered one of the prerequisites that are very crucial for development to take place according to Dollar and Kraay (2000:1). A number of theories have been devised in explaining how economic growth occurs or is supposed to be accelerated as discussed in a paper by Salvadori (2003:1). There has been remarkable change in the study of economic growth, with new theories replacing or complimenting the classical ones. Salvadori (2003:1) further explains that research on economic growth was one of the important issues in the classical political economy. The contention of theories by economists like Adam Smith (1776) and others dwelt much on issues of economic growth. However in the marginal revolution, as is referred to in the literature, the discussion on economic growth was pushed to the side-lines. The model by John Von Neumann (1945) was an attempt to generalise the Keynesian principle that looks at effective demand. And this rekindled the fire on the study of economic growth, but after some time. Salvadori (2003:2) further contended that after the paper by Robert Solow and his co-author Nicholas Kaldor (1956) was published, theories on economic growth were once again a central and widely discussed topic in the field of economics. This was a case

up until the 1970s, when the passion on economic growth experienced a slow and fading attention. Cortright (2001) states that the most recent theory in as far as growth theories are concerned is the endogenous growth theory, since according to this theory; the rate of growth is argued to be determined from within the growth model and is not considered as an external or exogenous factor as was the case in the classical theories (Cortright, 2001:2)

Some of the theories that have been discussed in brief in this section include the classical theories and the neoclassical theories. The new growth theory has also been discussed in detail due to its recognition of innovation and to a greater extent human capital importance in the growth process. The theories of growth have evolved over the years with the old classical theories being replaced by the neoclassical theories and then the contemporary ones. It is however important to make an exposition of the trajectory through which the theories have undergone these changes and what new discoveries have been added up to the currently acclaimed endogenous growth theory.

On the poverty front, so much has happened over the course of the 20th century in regard to research on poverty. The 21st century too has a number of discoveries in as far as poverty studies are concerned. In this chapter therefore, there has been a detailed analysis of the theories of poverty, laying emphasis on the different poverty measures and how they differ from each other, pointing out the advantages and the weaknesses of each poverty measure. The history of poverty in terms of definitions and what it means in different societies have also been considered in great detail. Section 2.3 is on the theories of poverty and the perceptions of the causes of poverty, which helps put light to the study on poverty in Malawi.

There is enough recognition in the literature like Dollar and Kraay (2000), Bourguignon (2004); and Hossein and Weiss (2002) that economic growth should be understood as necessary although not sufficient condition for sustainable poverty reduction. As pointed out in Chirwa (2004:2), the so much evidence points to the fact that the higher the economic growth rates, then the more the reduction in the incidences of poverty. In the early years of the decade starting 2000, there were a

number of studies that were done to clearly show the trajectory of growth and poverty reduction. With studies such as those by Bourguignon (2004:2) and Ravallion and Datt, (2001:2) that revealed heterogeneity in growth and poverty results in different countries there was and still remains a lot to be discovered on this economic growth - poverty reduction relationship. The World Bank (2001:1) pointed out that patterns of economic growth across countries and also the dynamics in the distribution of poverty among the citizens are all a result of a complex interaction between polices that have been in place, the institutions involved in the implementation of poverty reduction policies, the history of the country in question and geographical aspects. This entails that those countries that have experienced the same rates of economic growth, should not be expected to have their poverty reduced at the same rate or in the same manner. The amount to which the rate of economic growth a country has experienced translates to a reduction in poverty, will then be a function of initial income distribution and all the other factors mentioned above. Also access to opportunities by the poor will be a major component since economic growth will only be translated into poverty reduction through such channels as education, employment or access to basic needs. (World Bank, 2001:2). It is also important to note that the understanding of the source of growth and hence what needs to be promoted to achieve pro poor growth is of great pertinence. Thus, for growth to have some meaningful impact on poverty, it must occur in sectors in which a large proportion of the poor derive their livelihood according to World Bank (2012:1). The ILO (2008:2) in emphasising the importance of pro poor growth argued that growth that create employment as a channel for poverty reduction for example, should create those jobs in labour intensive sectors where poor participate. However, Bigsten and Shimeles (2003:3) contend that the relationship between growth and the distribution of incomes and how they further affect poverty reduction is still not clear both in and in empirical studies. This is a reason why this study endeavours to concentrate on Malawi as opposed to a number of countries that can easily exhibit huge fundamental differences and hence render the analysis problematic. This chapter lays out the basis in economic growth theory as a way of untwining the growth process to unravel the areas where growth emphasis can be

revealed and in the process discover the useful channels of impact in the growth-poverty reduction relationship.

2.2   THEORIES OF GROWTH

Economics is largely based on the fundamental principles of demand and supply and how through these forces, the market operates to ensure optimal allocation of resources and hence ultimately achieve maximum consumer satisfaction (Menger, 2007:56). Growth theories are also intrinsically focused on the wellbeing of the consumer or households; be it in the way it trickles down to the poor or on the way it provides employment in the labour force. It could also be from the government point of view in how social services are affected in a positive way when there is more tax revenue for the provision of social services, or provision of welfare benefits to the citizens. The fact remains that it is all connected to human welfare. In this study therefore, economic growth is looked at as a source of power through which means for poverty reduction are propelled by. The trace for the connection of economic growth and poverty reduction is the main theme. There are no doubt differences in the way growth is perceived to affect poverty. The trickle down theorists believe that the private sector if left alone would create enough wealth for the capitalists who will in turn let down some of their wealth to the poor below them through either employment or through their contribution to taxes, (Aghion, 1997:151). In the United States, this is a current debate between the two political sides, with the Republicans claiming that reduced taxes would induce economic growth as stated by the speaker of congress John Boehner during a Meet the Press interview on 13th March 2013. He said "lowering marginal tax rates will promote more economic growth." This is basically the fundamental principle in those that propose more tax reductions and less government involvement. It is a sense of the Say's law route of thinking. This is a belief that supply creates its own demand and that all leakages from the economy always find their way back into the circular flow of income and spending (Kates, 1997:193). According to this Says law, there can never be insufficient demand for goods and services in the economy and hence the economy will always bring itself to equilibrium (Cottrell, 1997:9; Todaro & Smith, 2011:732). The other side is the more

popular one which was a result of John Keynes blatant dismissal of the Says Law. The Keynesian economist believes that government has a big role to play and its more leaning to the Keynesian general theory of employment, Interest and Money (Kates, 1997:192). The proponents of a more government leaning economic setting argue that governments need to be involved in the reallocation of resources through taxes and social welfare, following the Keynesian theory which supports government involvement in an effort to stimulate economic activity and hence growth (Todaro & Smith, 2011:732).

Countries in the developing world are not as clearly defined as the developed ones in terms of the economic policies they follow. In Most cases, there is a combination of both fiscal and monetary policies. A mixture of both monetary and fiscal policy is seen in the policies of most governments in the developing world. In Malawi for example, there are both monetary and fiscal policies implemented now and again in dealing with economic issues (Chiumia & Simwaka, 2012:161). The kind of policy to be implemented usually depends on the economic challenge being faced and those recommended by the donor world. At the centre of all the policies being implemented in Malawi for example, is the Malawi growth and development strategy, which spells out the path that has to be followed to achieve sustainable growth and development, with the reduction of poverty as the core of the whole strategy (Chiumia & Simwaka, 2012:161).

In this study, the fact that economic growth is needed for poverty reduction to occur is accepted as a preconditioning assumption. There is no attempt to prove the importance of growth, since there is enough literature that proves the importance of economic growth already, like Ravallion *et al.*, 2000:1; Ravallion, 2004:2; Hossein & Weiss, 2002:1 among others. The study however investigated and analysed the channels of poverty reduction at district level in Malawi. Channels are presented through which poverty is seen to be impacted. However, the first part as pointed out already in the introduction attempts to highlight the sources of new wealth and hence deals with economic growth theories as a basis for understanding the way economic

growth is connected to the important sectors of the economy, namely education, employment, trade and enterprise among others.

A distinction should be made between economic growth and development. Although it is clear in the literature, the confusion between the two cannot be ignored. Economic growth purely means the increase in a country's economic output simply presented as the percentage change in a country's Gross Domestic Product (GDP) in a given period of time, in practical sense a year (Todaro & Smith, 2003:47). Kuznets in Todaro and Smith (2003:85) defined growth as a long term rise in capacity to supply increasingly diverse economic goals to the population. Thus economic growth is narrower in its focus as opposed to development which has economic growth and other social aspects in it. The UNDP has been in the fore front in defining what development ought to be. Development on the other hand means more than the increase in GDP; it is the change in a country's welfare. It focuses on the living standards, education and health of the people and the United Nations Development Programme (UNDP), uses a Human Development Index (HDI), which looks at a number of social indicators. In 2010 the UNDP introduced a new human development index (NHDI) to address criticisms of the first HDI (Todaro & Smith, 2011:54). Still the aspects measured include income, life expectancy, adult literacy rate, education and other non-income measures (Abid:55). In the UNDP (2011) human development report, sustainable human development is looked at as the expansion of substantive freedom of people today while making reasonable efforts to avoid seriously compromising those of the future generations (UNDP, 2011:2). This is a better measure of how a country is benefitting from any of its economic growth. Concern over the years has been on how much the poor benefit from economic growth when it occurs in an economy. Section 2 of this chapter focuses on poverty measures, theories and perceptions of the causes of poverty. A deliberate attempt has been made to define poverty clearly. It is important to measure poverty properly before determining whether it is changing. The measure of poverty and its relation to what is happening in the economy are dealt with in detail in the section 2.3 of this chapter. Section 2.2.1 that follows, briefly discusses theories of economic growth in an attempt to show the source of the means for poverty reduction.

2.2.1 The classical growth theories

Before the wealth of nations by Adam Smith in 1776 and other important works by writers such as David Ricardo, John Stuart Mill and Karl Max, the theories and understanding of economics and the workings of the society's economy were very basic. In the 1700s it was generally assumed that economic growth was a very irregular and extremely slow process which was mainly dependent on natural resources and agriculture, with labour mainly being looked at as more of a consumer and not a factor of production. As Cameron (2007:1) explained, over very long periods of time, people would breed more productive animals and plants as well as gradually improve agricultural techniques but this was slow and unpredictable. Cameron (2007:1) further claimed that it was believed that it would take a century or two to see any significant improvement in production that was dependent on these kinds of techniques. On the other hand, population growth was neither slow nor irregular unless checked or controlled by outside forces. Intellectuals such as Malthus (1798:6) concluded that production would grow slower or as he put it, arithmetically while population grows exponentially or simply put, very fast, and consequently average standards of living would eventually be reduced to survival levels. Any improvement in production would allow more people to survive and have children so that population would rapidly rise until society reached the new carrying capacity of the environment. Eventually, only famine, disease and war would be the only control measures to check population growth (Malthus, 1798:6).

Malthus (1798:4) felt that there was nothing society could do; any attempt to reduce poverty through government policies or charity was doomed to failure. This was due to the realisation that the poor would simply have more children who lived until the standard of living was back to subsistence levels once more. He felt that ordinary men and women would never be able to control their desire to reproduce and he termed it 'their animal passions'. This was a rather simplistic way of looking at growth and its relation to poverty (Malthus 1798:9).

David Ricardo (1810) and Adam Smith (1776) are considered the classical theorists whose emphasis on labour appeared to have focused on different aspects of labour,

and hence able to link growth with changes in poverty. The argument by Ricardo in what he defined as the natural course of the economy focused on an economic system in which capital accumulation was in the face of population growth but there was no technical progress. According to Kutz and Salvadori (2001:2):

> David Ricardo and Robert Torrens who came close to discovering, with regard to the institutional setting of competitive capitalism, the fundamental duality of the (inverse) relationship between the rate of growth of the economy and consumption per capita, on the one hand, and the (inverse) relationship between the rate of profit and the real wage rate, on the other. Indeed, with free competition and assuming that the entire social surplus will be saved and invested, that is, accumulated, in conditions characterised by constant returns to scale, the surplus rate gives both the general rate of profit in the economy and its rate of growth. The corn model therefore provided useful services as a starting point of a probing into the laws of capital accumulation, economic growth and income distribution (Kutz & Salvadori, 2001:2).

Ricardo's thinking was a clear contrast to Smith who in his argument contended that a key to growth of labour force was the division of labour which also depends on the market and the extent of capital accumulation (Smith, 1776:1). In these classical thoughts concern with growth was then largely confined to the historical schools, although these great thinkers of economics did little more than improve the collection of facts on economic history. Salvadori, (2003:2) further points out that these great thinkers managed to explore institutional cultural roots of productivity and factor changes regarding population growth and capital accumulation. The first of the structural theories was developed by Schumpeter (1911), the theory of economic development. This was different from Adam smith in the sense that Schumpeter looked at innovation that improved growth by emphasising on efficiency in the combination of resources. The important area in the classical economists is that besides the simplistic thinking of how population would grow to lead to survival levels hence propelling poverty. They later recognised the importance of population by looking at labour as a factor of production.

2.2.2 Neoclassical theories

The neoclassical theories like the Harrod-Domar model and the Solow's growth accounting theory had also an inclination to the relationship between the workings of the economy and how it affects incomes of people. The approach to the discussion of the neoclassical theories is in the light of the connection they present to poverty reduction and this is mainly done in the way they looked at labour. One of the theories under consideration is the Harrod-Domar Model. Soto (1964:380) points to the fact that the fundamental underpinnings of this model -since others have argued that it is not a theory like Sato (1964:380) - was the formulation that GDP growth is a proportion of the share of investment spending in GDP. Harrod- Domar model also assumed the existence of unemployment implying the presence of additional labour to be used any time it is needed. The failure to include labour in the model and just assuming its existence renders the Harrod-Domar model weak in linking growth to poverty reduction (Perkins, *et al.* 2012:78).

The Solow neoclassical growth model is different from the Harrod-Domar formulation in the sense that Solow added labour and technology to the growth equation. Harrod-Domar model states that savings and investment are crucial elements of growth. Any economy or country in order to experience growth must save a certain percentage of its output of national income for replacing worn out investments. But in order to grow new investments which in this case represent net additions to the already existing, capital stock is necessary. Todaro and Smith (2011:112) explain that, the Solow growth model therefore links growth to savings and investment. This is however different from the fixed-coefficient and constant –return to scale assumption that was proposed by the Harrod-Domar model, Solow's model shows that there exists diminishing returns to labour and capital in a separate manner and also that there are constant returns to both factors jointly. According to this formulation, changes in technology was considered as a residual factor in explaining the long term growth, and its level was determined by outside factors other than those included in the model (Todaro & Smith, 2011:112).

Salvadori (2003:3), claimed that Solow in his formulation, felt that the capacity of an economy could grow regularly each year if society saved part of its resources and used them into building the economy for the future which is essentially a proposition for investment. His research suggested that improvement in the quantity and quality of physical capital were the largest and probably most important contributor to economic growth in the US and other developed countries that had experienced growth in the previous century (Salvadori, 2003:2). The quantity of capital can be represented as the amount of physical capital per worker while the quality of capital addresses changes in technology. Solow estimated that in the US experience, increases in the quantity of capital typically raised productivity (GDP/worker) by one third as much, all other things equal. One would expect that this relationship would change if the quantity of capital in an economy were extraordinarily low or high, so that a very small total amount of capital would probably see a larger marginal payoff and a very high total amount of capital would probably experience diminishing returns. Further improvements in productivity can occur from the development of new technology. The productivity factor which Solow saw as emanating only from new technology is the link to labour and human capital investment that was missing in the model. This human capital factor was explained later in the new growth theory as will be expounded later in section 2.2.3 of this chapter.

2.2.2.1 Rostow's stages of growth model theory

This is probably the most outspoken of the kind of growth that moves in stages. According to Rostow (1990), the transition from the state of underdevelopment to development can be looked at in terms of stages through which all economies must go through (Todaro & Smith, 2011:111). Rostow (1990) stated that it is possible to point out all societies, in their economic circumstances, as existing within one of the five stages; the traditional society, the pre-condition to take-off into self-sustaining growth, the take-off, the drive to maturity and the age of high mass consumption. He stated that all these stages are not in any sense a mere description or a mere generalisation of certain factual observation, but they have an intrinsic logic and

continuity that connects them together. In the end they constitute both a theory about economic growth and a more general theory of modern history (Rostow, 1990:1).

In the stages of growth, the rich and developed countries are seen to have already gone through the stage of take-off into self-sustaining growth and the underdeveloped countries are seen to be either still under the traditional society or the pre-conditions stage. This theory therefore states that the undeveloped countries only have to follow certain rules of development to take-off in their turn to self-sustenance.

2.2.2.2 Big push

There is a well-known narrative of economic development that states that poor countries are desperately caught in poverty traps. It further points out that poor countries need a Big Push in terms involving investment, which in turn can lead to a take-off in per capita income. This narrative has been the centre of the justification for in foreign aid in the debates since the 1950s (Easterly 2006:1). This is what is known to have been the original justification for the rich countries to start using their tax payer's money on foreign aid to poor countries. The thinking that poor countries need a big push lost credibility for a sometime but has lately made a comeback since the need to focus on growth for development is taking centre stage again (Easterly, 2006:1). This approach in essence is the understanding that there is need for a big push for the poor countries to move to a different stage. This in a way links the Rostow's stages of growth with the big push theory.

When a government decides to build a big university in a rural area far from town where there are no primary schools and no hospitals and no restaurants and no roads, like what the government of Malawi has done with the building of University of Science and technology in Thyolo that is a big push approach to development. The reasoning behind the initiative is that, this big university will need houses for staff and staff will need a primary school for their children and a hospital for their families. Also the students that will come to this University will need shops to buy groceries and other necessities. There will be need for a good road to this place and there will

be need for gas stations and restaurants and lodges for visitors, this in a long run will become a new town with jobs created and banks opened. That is a simple explanation of a big push approach. It means doing something big and the rest will follow. A big push involves a combination of a number of factors; first a big increase in foreign aid, second an increase in investment in many different sectors which should be simultaneous to the increase in foreign aid. These investments should be in areas like education, health and production. Thirdly there is need for a rapid acceleration of economic growth with the consequence that poor countries escape from a poverty trap, or as is known in the stages of development, a take-off (Easterly, 2006:2).

In considering the attention that development organisation are putting in the usefulness of aid, Easterly (2005:3) points out that it is a new wave of the big push. He argues that the Big Push has returned to favour as a good policy for development after years of less attention (Easterly 2005:3). This new focus to the big push is mainly coming in because of the need to meet the Millennium Development Goals (MDGs). Most of the MDGs are concerned with the improvement in social and economic indicators in developing countries by the year 2015, and this need has in turn led to a more increased emphasis on the amount of foreign aid directed to developing countries especially those seen to be making progress in achieving the MDGs. The UN Millennium Project, commissioned by Kofi Annan to assess how to meet the MDGs set for 2015, issued a large report in January 2005 that argued that poor countries were in a poverty trap. And in order to get out of the trap what was required was a big push, such kind of a big push that would lead to basic investments between then and 2015 in a number of key sectors. Thus in order for any meaningful change to be seen, in any of the sectors identified such as education and health there was need for something big which probably from the donor community (Easterly 2005:3; Sachs, 2005:208).

UNDP (2005) argues that Aid provides poor governments with a resource for making the important investments in health facilities, education services and economic infrastructure needed to get out of the cycles of deprivation (UNDP, 2005:1). The

UNDP further contended that without a sustained increase in aid to the poor countries, the MDGs will not be achieved in the poor countries (UNDP, 2005). The former British Prime Minister Tony Blair also called at the World Economic Forum in Davos in January 2005 for a big push forward in Africa, featuring a big increase in foreign aid. Prime Minister Blair initiated a Commission for Africa, which released its findings in March 2005. The report, written by a Secretariat headed by economist Nicholas Stern, summarised its findings in this manner; "the actions proposed by the commission constitute a coherent package for Africa. The problems they address are interlocking. They are vicious circles which help one another. They must be handled together as one problem. To be able to deal with the vicious circle, that Africa requires a comprehensive big push on many fronts at once (Easterly, 2005:4).

The emphasis on the importance of education has an intrinsic assumption that once every one is educated, then poverty is dealt with, the assumption embedded is that educated people are employable and with more education or years of schooling the higher the probability of earning a higher income. This is a direct link to the human capital theory. It is however necessary to make sure that job creation is factored in. The fact that those with more years of schooling have a corresponding higher earning is more associated with income earned from earnings on a job than is associated with any other form of income source. It is therefore a logically important requirement that education that deals with poverty should be associated with job creation. Simply stated, the channel of education equals poverty reduction is intertwined with the channel of employment equal to poverty reduction (Islam 2004:3 Hull, 2009:74). All these two channels benefit more from sustained economic growth and are considered in detail in chapter three of this study.

2.2.3 New Growth Theory (NGT)

The link and relevance between growth and poverty that the new growth theory reveals is overwhelming and hence important to this study. As pointed out already in the introduction chapter, this study attempts to unravel the channels through which economic growth effects poverty reduction. In that sense therefore, an understanding of the dynamics behind any economic growth would be a relevant starting point in

discovering the link to poverty reduction. The new growth theory with its emphasis on knowledge in people and technology by people as they invest in innovations of machines becomes a great point of departure in this study.

As an introduction to the New Growth Theory (NGT), the first point to note is that it emphasises that economic growth for those countries experiencing it, results from the increasing returns associated with new knowledge. This Knowledge is the source of technology which is a result of economic activity and not an exogenous component. Thus NGT is also referred to as the endogenous growth theory by the mere fact that it incorporates issues initially considered as external or exogenous too the growth process according to Romer (1994) in Cortright (2001:3). In this theory, knowledge has a number of different properties when compared to other economic goods which include properties of being a non-rival, good and to a greater extent excludable good. The excludability is only to an extent as returns to acquired knowledge and its resulting benefits can be characterised with externalities which are non-excludable, although mostly in a positive way. Knowledge can therefore be excludable in the sense that ideas can be patented or protected by copy right laws. The fact remains however that knowledge is non-rival. Knowledge or an idea can be used and reused at no or very small cost without depriving the next user from benefiting or using the same. The non-rival quality embedded in the nature of ideas or knowledge is what is behind the driving force of economic growth according to the position of the New Growth Theory. As more and more knowledge is accumulated and more ideas are developed about how the world ought to work and how to make better use of the available resources, the economies are made to develop further and better and more wealth is created in the process as explained by Cortright (2001:6).

The ability to grow an economy by way of increasing knowledge as opposed to labour or capital creates opportunities for growth without limit. Since markets on their own fail to produce enough knowledge because innovators cannot capture all of the gains that come as a result of creating new knowledge the creation of knowledge has seldom appeared as a market viable venture. And because knowledge can be

infinitely put to use repeatedly at zero marginal cost, those firms or businesses that employ or use knowledge in their production can earn quasi-monopoly profits. Economies with increasing returns that are relatively wide spread are more unlikely to develop along a unique equilibrium path than those without. Development may be a process of creative destruction, with a succession of monopolistically competitive technologies and firms. Markets alone may not converge on a single most efficient solution and technological and regional development will tend to exhibit path dependence (Cortright, 2001:1).

Thus broken down further, it can be stated that; New Growth Theory is a view concerning an economy that has in it two crucial points. First, it looks at technological advancement as a product of economic activity as already pointed out in the introduction. This is a big departure from previous theories which treated technology or technological progress as a given, or a product of non-market forces. This is the reason why New Growth Theory is also referred to as endogenous growth theory, because it internalises technology into a model in explaining how markets function. It acknowledges that the market forces of demand and supply interact with new innovation and progress in technology. The second point is that, New Growth Theory postulates that as opposed to physical objects, knowledge and technology are characterised by increasing returns, and these returns are a driver of the process of growth. The theory of diminishing marginal returns therefore does not apply to knowledge. This has been a unique quality of human capital as recognised in human capita theory for years.

There is a fundamental question that is addressed by the new growth Theory. This Question is about what makes economies grow: Why is the world richer today compared to the wealth that existed a century ago? Why is it that some economies have grown more than others? The important point of New Growth Theory is that knowledge accumulation drives growth. Arguing that spending money on knowledge accumulation is more beneficial to growth than physical infrastructure. Because ideas are not a rival good, they can be infinitely shared and used over and over; they can be accumulated without limit. They are not subject diminishing returns. Instead,

the increasing returns that result from knowledge propel and accelerate economic growth. New Growth Theory is important in the understanding of the on-going shift from resource-based economies to knowledge-based economies. It explains the fact that the economic processes of knowledge accumulation and how it is diffused are critical aspects in as far as shaping the growth of nations, communities and individual firms is concerned (Cortright, 2001:6). This is where human capital theory meets economic growth theory.

In their analysis of classical theories, neoclassical theories and Keynesian views on growth and distribution, where the sources of each theory and the links there in are explained; Salvadori (2003:1) pointed out that the New growth theory attempts to provide in a better way, an endogenous explanation to technical progress that is able to generate growth process which does not slowdown in time. Through the non-diminishing rate and that the closeness of these models developed by the NGT and those of the classical economists is basically linked on the same issue. By comparison it can be noted that the role of labour in the classical theories is assumed by human capital or knowledge in the NGT. The links can also be found in the relevance of increasing returns and that attributed to socio-institutional factors, alongside the economic factors (Salvadori, 2003:1). As the connection between knowledge and technology goes, the link extends to the connection between technology and growth. The neoclassical theories were cognisant of the fact that technology is a major aspect of growth. This is why most developed and advanced economies were characterised with huge investments in technology. This was looked at separately from knowledge and hence human capital. The NGT clears out the mist and puts in clear perspective how an investment in knowledge is a direct link to technology (Romer 1986:1, Cortright, 2001:4).

Much as it can be looked as a new view of the same principles embedded in the neoclassical theories, the New Growth Theory challenges to a greater extent the neoclassical model in a number of important ways. In the first instance for example, the exogenous growth models developed by Solow and other neoclassical scholars to a large extent did not explain what caused technological progress over time. The

fact that they had an underlying assumption implying that technology happened by chance. This failure to explain the source of technological progress led to an emphasis on capital accumulation and labour force improvement as the major sources of growth (Cortright, 2001:4). In his own words Romer (1986) stated that we now know that the suggestion made by the classical economists that we can become rich by accumulating more capital is wrong (Romer, 1986:1). Hence overly the underlying principle is that any type of physical capital is subject to diminishing returns; economies cannot grow just by adding more and more of the same kind of capital since beyond a certain point it will become a losing venture (Cortright, 2001:4). The relevance of the growth theory to poverty reduction relies on the channels through which growth is unleashed towards poverty reduction. This study uniquely explores that process and attempts to identify three major channels namely employment, education and Trade. As will be expounded further in the next chapter, there are other channels that will be examined beyond the aforementioned. The NGT however uniquely singles out the importance of knowledge accumulation in the growth process. Most poor communities are characterised with less informed people, thus the absence of knowledge is a single direct recipe for a household or person to be trapped in poverty. It becomes easy to deduce therefore the importance of education in the effort to deal with poverty.

2.3 HISTORY AND DEFINITIONS OF POVERTY

The history of poverty dates back to centuries ago. There were already works on poverty in the 17th century especially in the United Kingdom. Not that poverty never existed before that, but the study of the same and the effort to define and understand poverty, the extent that required attention and definition is centuries old. Poverty has been defined and conceived in so many ways and the understanding of what constitutes a poor person has evolved over the years and keeps changing, (Townsend, 1979:31). Townsend (1979:31) went on to contend that from the 1880s to the 1970s, three different conceptions or views of poverty had emerged as a basis for comparative work internationally. This has been due to changes in the understanding of what it takes to survive or for subsistence living. According to the

poverty literature as discussed by the Rio group (2006:17), the alternative conceptions in the evolution of poverty depend in principle on the understanding of subsistence life styles, basic needs in terms of food and housing and relative deprivation. Where subsistence can be understood as the life style that a household lead if it is barely surviving, thus basic needs of food, clothing and shelter are the only considerations. Townsend (1979) argued that in Britain the idea of subsistence standard went through two stages, first it followed the work and therefore recommendations from nutritionists, who based their conclusion from survey information. Much of the data was collected by surveys carried out by researchers like Rowntree, (1901:1, 1918:86). The other stage was then in the years of war 1939-1945 where information was collected by means of a report on social security drawn up by Sir William who was later on called Lord Beveridge as reported in Beveridge (1942:1). Before that, the needs of the poor were ascertained by measuring the quantities of bread flour or bread and sometimes cash; these were under the old poor laws. The cash was given in terms of what was required to be able to buy the stated amount of bread flour. In other areas they also included allowances for the purchase of other additional items deemed to be necessities and hence part of the basic needs like flour. Therefore the defining of poverty was mostly dependent on what nutritionists suggested. In this nutritionists approach, households were considered as poor when their incomes were not sufficient enough to afford them the basic necessaries at a minimum for the sustenance of a basic life style. Rowntree (1918:86) argued that this in itself was also a source of miss-understanding as what constituted a minimum requirement was not clearly stated. Whether it was only food or whether other non-food items were supposed to be included. One thing that was clear to be used was to decide on the measure of poverty through a consideration of housing and food. A family was considered as being in poverty if its income minus rent was found to be below a decided poverty threshold. Although consideration was given in the calculation of income requirement for clothing, fuel and some other items, the consideration was very small, and food accounted for the biggest share of subsistence amount being considered. The investigations of Rowntree (1918), There was considerable influence from Bowley

and others during the 1890s and the early decades of the twentieth century. From this work there are examples like the description of social condition measure. This was at first done within different countries but then due to wide application by such agencies as the World Bank. The particular interpretation by Beveridge's of subsistence income was used up until the post-war years. (Rio-group, 2006:20).

The idea of subsistence income or what was basically a measure stick for poverty was then taken across to member States of the former British Empire. This was such a common idea of understanding levels of what was understood to be enough for survival. Pillay (1973:1) argued that the wages of blacks were paid South Africa especially during the apartheid period were partly arrived at by using a poverty line emanating from this understanding of this idea of subsistence. This was also echoed by Maasdorp and Humphreys (1975:1). In coming up with development plans, former colonised countries such as India and Malaysia depended to a greater extent on the subsistence conceptualisation (India, 1978:1; Malaysia, 1986:1). In the United States of America for example, subsistence income or survival is still an important concept, even though today it is formulated in a better way in explaining what the government's measures of poverty consists of (Fisher, 1998:1).

Although the use of subsistence as a way to explain or to define poverty was so useful for a long time, it later came to be criticised as Rein (1970:1) and Townsend (1979:31) revealed. One of the outstanding criticisms was that, inside this approach, the need of people are looked at as mostly physical needs, like, food, housing and to some extent clothing and nothing on the social needs. This is basically the thinking that looks at only the aspects of human needs that can be bought by money. This argument of just looking at food, clothing and shelter is contested as looking at people as simply individual organisms requiring replacement of sources of physical energy. Lister (1990:192) contended that people are social beings expected to perform socially in the societies they live, demanding roles as workers, citizens, parents, partners, neighbours and friends. To that end therefore, they are not simply consumers of physical goods but producers of those goods and are also expected to act out different roles in their various social associations. They are dependent on

collectively provided utilities and facilities. These needs apply universally and not merely in the rich industrial societies or in poor societies alone. The lack of elaborate social institutions and services in low income countries and their scant resources direct the attention to whether or not the most basic material subsistence needs can be met in those countries. Meeting such needs as the satisfaction of hunger is widely accepted as a priority in looking at poverty alleviation efforts. Such needs have been included in the categorisation of absolute poverty, where on its own it is also referred to as food security. Townsend, (2006:22) points out that further search has shown that the adjective absolute would better be replaced by extreme or severe. And physical needs turn out to be subject to constant change because of shifts in patterns of activity and the social construction of successive forms of material consumption, or simply put, what people need keep changing with the passage of time. Material goods are not, after all, fixed or unvarying. And even the amount and kind as well as the cost of the food that is eaten depend on the roles people play and the eating customs they observe socially. So, in the final analysis, material needs turn out to be socially determined in different ways. (Rio-group, 2006:20)

The meaning of poverty is different if looked at from different point of views, especially different vintage points of contexts that vary in income or cultural or development contexts. The Rio expert group on poverty contended that when people lack, have no access to the income and other resources, like the use of facilities or assets and do not receive the goods and services then they are poor. This is basically in kind equivalent to income as is the case with most welfare, to obtain the conditions and necessities of life. These people lack basic things like food, material goods, amenities, standards and basic services, to afford them the opportunity to act in their roles, as is expected of them by the society. These are the ones that are considered poor. They are deprived because of their poverty. (Rio group, 2006: 31).

In their explanation of poverty, Todaro and Smith (2003:195) started by pointing out how different people responded to the question of what is poverty. One person responded, "Poverty is everything that you have seen outside my house". This also vindicates the fact that what poverty is in one society may be completely different to

what poverty is in another. A person in a developed country like UK may perceive poverty differently from a person in a village in Malawi. The literature is full of definitions of poverty; one clear thing is that poverty can be extreme, and also relative. According to World Bank (2005:1) poverty looked at in terms of high levels of deprivation in what would allow somebody to have their well-being. Although this would require a need to define further what one's well-being means. This is basically a person's ability to have a command over commodities in general. This means that people are well- off if they have a greater command of what they need in life. In this view, the main focus is on whether households or individuals have enough resources to meet their needs. In this case therefore a measure of poverty would include comparing an individual's income or access to what gives them a command over their need, to some defined cut off point below which they one is considered to be poor.

Poverty can also be defined as a deprivation of basic human necessities. As is the definition in most cases, poverty means that one is not able to afford certain pre-determined needs of consumption. An important issue in this context is the difference between absolute or extreme poverty and relative poverty. Absolute poverty as defined by Ravallion, *et al.* (2006:3) entails that the poverty threshold has a fixed purchasing power; two households with the same real income are both either poor or not poor. The poverty line is decided upon by basically considering the nutritional requirements of a human survival. On the Other hand relative poverty one means that one is poor depending on who they are compared with. Therefore, different groups or countries would have different poverty lines Ravallion *et al.* (2006:3). Extreme poverty may even mean the lack of food or shelter. A second approach to well-being which may explain poverty better is to find out if people are able to access a specific type of consumption good: do the people have enough food, or shelter, or health care, or education or anything that is considered basic? In this view one has to go beyond the basic income measure of poverty. The World Bank contend further that nutritional poverty might be measured by considering whether children have stunted growth or not; and educational poverty can also be

measured by looking at whether a person is illiterate, or by the years of formal schooling they have received, (World Bank, 2005:1)

The amount of material needs and the extent of social deprivation in comparison to income is the basis for the measure of relative deprivation. The method of ascertaining the threshold amount of income that is required by households of different compositions to surmount poverty becomes is then arrived at by looking at these needs. The application of this method permits conclusions to be reached about trends in poverty in and across different countries (Townsend, 1979:1; 1993:33).

In its broadest sense, perhaps the broadest approach to well-being and hence in relation to poverty is the one suggested by Sen, (1987:1), who contended that well-being is a function of a capability or ability as per the expectation of the society. Thus poverty arises when people lack basic capabilities in dealing with what they need. This is further seen in having inadequate income to support the acquisition of the basic life requirements like education, good health, or security. Sen further articulated that this may have such other effects as low self-confidence, or a sense of powerlessness, or the absence of rights such as freedom of speech. Viewed in this way then, poverty can be seen as it is in the real sense that is a multi-dimensional phenomenon, and cannot be solved with just simple solutions. This then points to the fact that while higher average incomes may certainly point to a direction where there is less poverty, the income may need to be accompanied by other measures that should help to empower the poor, or insure them against possible risks, and to a greater extent strive to address specific weaknesses that are characteristic of poor societies. Some of these weaknesses include inadequate availability of schools, poor access or no access to clean water, and below standard kind of health service. This broader view underscores the importance of the process or channel through which income based approach to poverty reduction need to be analysed. The fact that economic growth can lead to increase in average incomes is important, but if the income is increased through better health or higher education attainment; then poverty is dealt with in a better and broader sense (UNDP, 2005:1).

Related to the definition of poverty is the concept of vulnerability as is also pointed out by the World Bank (2005:1). They explain that poverty is related to, but different from, inequality and vulnerability. This difference is in the sense that Inequality is more to do with the distribution of attributes, like income or consumption, but across the whole population or a society under consideration. It would even make a big difference if the distribution aspect went further to look at shares at household level as the equivalence scales attempt. In the context of poverty analysis therefore, inequality consideration is important if one is of the view that the welfare of an individual depends to a greater extent on their economic position relative to others in society. However, vulnerability on the other hand is defined as the risk of falling into poverty in the future, this is more of an expectation than is a reality. So even if the person is not necessarily poor in the present time, they can be considered vulnerable. Vulnerability is often associated with the anticipation of what may happen due to unforeseen circumstances. These may include situations such as drought, a drop in farm prices due to a movement in demand or over-supply of the produce. An example is what happened to demand for tobacco on the world market in 2000. Due to increased anti-smoking campaign, the prices of tobacco in Malawi had plummeted considerably and farmers were earning much less than what they used to get (Diao, *et al. 2002*). This resulted in other households falling back into poverty. Other risks may include a financial crisis as was the case in the wake of the 2008 global financial crisis. It is interesting to point out that, Malawi just like most countries in Africa that are not highly connected to the international markets, was not affected that much with the global financial crisis. If anything, only the reduction of funding for projects was experienced as those that give funding are mostly in Europe and America, the two hardest hit areas (Jumbe & Msiska, 2010:10).

Vulnerability is a key dimension of well-being since it affects individuals' behaviour in terms of investment, production patterns, and coping or surviving strategies and the perceptions of their own situations in relation to what is considered a risk free situation. The vulnerable category is mostly dominated by women and children and also people with physical disability, these groups of people are highly at risk in most aspects and hence susceptible to poverty (Lister, 2005:3).

A new approach although not very new, is the concept of multidimensional poverty measure. The Oxford Poverty and Human Development Initiative (OPHI) have come up with a poverty measure that looks at poverty as dependent on three dimensions, namely, education, health and standard of living (OPHI, 2013). With this approach they construct a Multidimensional Poverty Index (MPI). The MPI has three dimensions and 10 indicators, which are shown in figure 2.1 below. Each dimension is equally weighted, each indicator within a dimension is also equally weighted, and these weights are shown in brackets within the figure 2.1 below.

FIGURE 2.1: MULTIDIMENSIONAL POVERTY INDEX
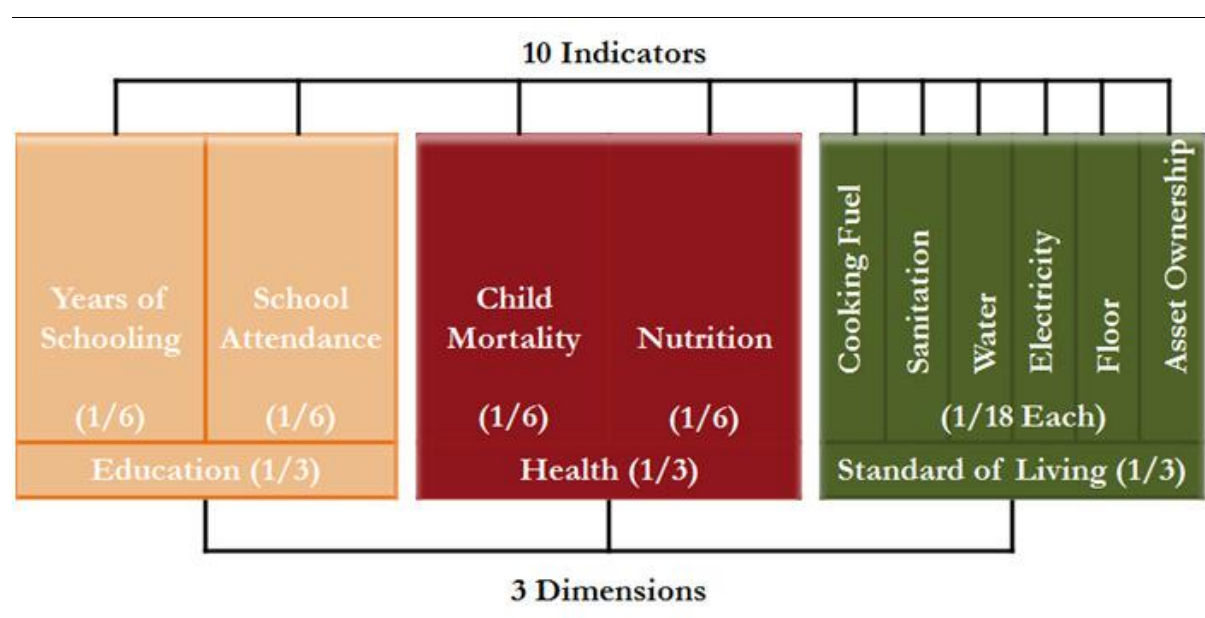
Source: OPHI, (2013:1)

This construction by the OPHI shows that the understanding of poverty is still evolving and that the monetary measure which is used in most studies has a lot of short falls to be corrected. The section that follows looks at the theories of poverty and goes further to analyse the perceptions of the causes of poverty.

2.3.1 Theories of poverty

Theories of poverty emanate centrally from the differences in the definitions and the perceptions of what the root causes of poverty are and the understanding on how to deal with poverty. As argued in the introduction in chapter one; poverty remains a

major problem that countries all over the world have over the years put together their efforts to fight against. The need to deal with poverty in all its forms is therefore a part of most of the initiatives being carried out in the developing world. In most of the programs being initiated and implemented by the multilateral organisations, such as the World Bank, European Union (Commission), United Nations Development Programme among others poverty alleviation stands out as a priority. It is also clear in the efforts by the developed countries that they feel obliged to act in a way that is consistent with concerns over poverty and how to reduce or eradicate it. Of major concern are the people that live in abject poverty that is, those that do not have access to basic needs for survival. Both developing and least developed countries have most of their policies and programs focused on how to deal with poverty (UNDP, 2012: 1).

There are still contentions on what the definition of poverty should be and hence the measure of the same. The lack of agreement or consensus on the definition is a characteristic of most phenomena that involves people, since human beings are not uniform in any sense of the word. The fact that human beings are different in in what they perceive as necessary, influences the differences in their perceptions. But whether poverty is perceived or is a reality is not a contention at all. There is an agreement on what basic needs and hence basic welfare entails, and the absence of the same constitute poverty. The section that follows expounds on the theory and perceptions of poverty since studies around it became known. The theories of poverty emanate from the different efforts that have been used to try and explain the causes of poverty and identify areas that can be focused on in order to deal with this social ill. There are a number of theories that exist in the literature; these theories are different depending on the origins of the understanding of the assumed causes of poverty. As Bradshaw (2005:1) clearly pointed out as they discussed five theories of poverty. Theories of poverty originate from individual deficiencies or limitations, cultural belief systems that support subcultures in poverty, political-economic distortions, geographical disparities, or cumulative and circumstantial origins.

The literature on theories of poverty agrees and acknowledges different theories of poverty, although to a greater extent divide into two points of view or understanding. These points of view are basically the conservative view which bases the explanation of poverty on the individual or as others like Ryan (1976) called it, blaming the victim. The other side puts the blame squarely on the society or social functioning and is referred to as the liberal or progressive theories of poverty. One common feature is that all the theories attempt to identify the root cause of poverty. As Bradshaw (2006:5) contended that a number of authors have made the same distinction, pointing out that virtually all authors distinguish between theories that root the cause of poverty in individual deficiencies (conservative) and theories that lay the cause on broader social phenomena (liberal or progressive). Ryan (1976) addresses this dichotomy in terms of individualistic as blaming the victim and vice versa. Goldsmith and Blakely (2010), for example distinguish poverty as pathology from poverty as incident or accident and poverty as structure. Schiller (1989:2) explains it in terms of flawed characters and restricted opportunity, Jennings (1999) reviews a number of variants on these individual compared to society conceptions, putting emphasis to racial and political dynamics. One clear identifier of the theories is the perceptions that people have regarding poverty. The following sections deals with the perceptions of the causes of poverty and try to link them to the two categories of theories of poverty.

2.3.2 Perceptions of the causes of poverty

In this section of the study, an attempt is made to relate the theories of poverty as discussed by the conservative approaches and the liberal approaches, to the perceptions of poverty or causes of poverty as is mainly referred to in empirical research. There are four main categories of perceptions on the causes of poverty namely;

1. Individualistic.
2. Fatalistic.
3. Structural and
4. Psychological (DiNitto, 2000; Feagin 1972; 1975; Mullaly, 2007).)

Individualistic perception is where the poor person is seen to be responsible for his or her condition; the fatalistic perception is where poverty is perceived as fate; structural is considered where the society and its functions, the way it is structured and the availability of opportunities is seen to be the cause, and lastly the psychological perception where poverty is seen to be cause by some emotional failings of the poor. The psychological is distinguished from the individualistic in a way that in the later, the poor is blamed for his condition which in the former it is understood to be of the victims control. A discussion on the perceptions is important since it helps to understand why different countries design poverty alleviation programs in certain ways (Yun & Weaver; 2012: 184). The sections that follow present a more detailed discussion of each of these perceptions

2.3.2.1 Individualistic perception

The Individualistic perception of poverty and hence the approach to poverty has the poor person at the centre. According to Appelbaum *et al.* (2006:390) the poor are considered to be at fault for their poverty due to lack of effort in achieving a better life or because they have a questionable moral aptitude that makes them fail to succeed or they lack the ability to get the basic needs in life (Wilson, 1996:413). The individualistic perception is common from a stand point of the well-off who usually feel they worked for their wealth and the poor are just lazy to do the same. This is mostly common in the conservative side of theories of poverty. The implications of this perception is that poverty policies are not rigorous since there is an intrinsic feeling that poverty will always be there as lazy people will always be there. As pointed out by Rose (1972:20) that in the early nineteenth century, leading rich people believed that poverty was necessary, to motivate the labourers to work or otherwise the labouring poor would not be motivated to work. They also believed that it was pauperism, a condition of moral defect, rather than poverty, a lack of material resources, which was the problem or the issue with deprived people. They therefore combined fatalism, believing that the poor will always be there in the society, and hence the perception that it is individual weakness of character, like drunkenness, improvidence, fecklessness; which brought people into poverty. This is a perception

rooted in conservative theory which blames the poor for their circumstances (Feagin, 1972; 1975).

2.3.2.2 Fatalistic perception

Poverty is sometimes considered to be fate or out of any ones' control. This is the fatalistic perception, where according to Bullock and Waugh (2005:1133) poverty befalls other people as an accident. The basis for this is where people have found themselves stricken with poverty because of death of their parents or guardian. The fatalistic approach therefore does not blame the poor or the structure (Feagin, 1972; 1975).

2.3.2.3 Structural perception

Where the individual is not blamed but the society, or the structures in the society are blamed for people's poverty situations, it is referred to as structural perception. Under this perception people are considered poor due to lack of opportunities which are not available to everyone regardless of the effort that an individual put in trying to live a better life. This is common in societies where the structures favour a certain group of people, or opportunities are available to a certain group of people or income group. It could be educational opportunities or job opportunities, but something fundamental that will eventually affect a person's ability to fend for himself or his family. Bullock (2006:2) in writing on America argued that racist and sexist attitudes constrain upward mobility and that over the years people have become more tolerant to inequality in the American society. The circumstances of inequalities based on race in countries like South Africa are rooted in a structure that was biased in its functioning towards one race against another and is still blamed for the poverty prevalent among black South Africans today. In other countries, education opportunities are in such a way that the poor are disadvantaged and they end up with no skills to afford them an opportunity to work in high skills jobs, and hence propel the incidences of poverty among such groups (Yun & Weaver, 2010:175).

The perception that looks at poverty as fate, claims that people find themselves in poverty due to unknown circumstances and it is something that cannot be controlled or avoided. It is fate. Rowntree (1902:119) said he would not discuss the ultimate causes of poverty since to do that would be an attempt to raise the whole social question. He however listed what he termed causes of primary poverty. His list included the following;

1. Death of chief wage-earner.
2. Incapacity of chief wage-earner through accident, illness or old age.
3. Chief wage-earner out of work.
4. Chronic irregularity of work.
5. Largeness of family.
6. Lowness of wage (Rowntree 1902:119).

This Rowntree list may transcend the fate category and include the other perceptions. For example the number five cause which is the size of the family can be the poor's fault hence falls under the individualistic where the family earner if the father can be blamed for not deciding on the size of his family based on the means at his disposal. However it can be fatalistic if the family is a child headed family where both parents died and the child is left with the responsibility of fending for his or her siblings. A family size can be big because it is extended to take care of orphans from a relative (Ansell & Blerk 2004:1).

2.3.2.4 Psychological

Weiss and Gal (2007:894) contend that poverty can also be caused by the psychological dimensions of a person. Emotional problems and lack of interpersonal relationships can deprive a person the ability or opportunity to succeed in their life. A person that is mentally ill or psychologically challenged can never afford a decent living without assistance. This perception therefore shifts the blame from the person and even the structures of the society or the social construct and relates poverty somewhat to fate as is in the fatalistic perception. The psychological perception of poverty cause can further be linked to the failure of society to help its vulnerable members. This is more to do with support systems for those that cannot help

themselves. However in poor countries where the welfare systems are poorly funded or completely inexistent, this perception could account for a good share of poverty cause.

2.4.   MEASURES OF POVERTY

The measures of poverty that exist in the literature are to a greater extent a function of the definition adopted. Most poverty measures are associated with income of the individual or household. Since the early days in the study of poverty, It was always related to income, and income or monetary understanding has remained at the centre of the concept's meaning. There are advantages in keeping the income feature of the poverty concept. Since income is just a component of what poverty is supposed to entail. But income is itself not an easy concept than poverty and has to be dealt with carefully and with precisely elaboration (Rio Group, 2006:42). For example in his paper on the relationship between economic growth and malnutrition (Headey, 2010:2) argued against the over reliance on income measures and stated that there are some grounds to believe that malnutrition rates are in some ways a better measure of poverty than monetary measures according to (Heltberg, 2009:77). He further argued that, for example, unlike nutrition outcomes, monetary measures do not capture access to public services citing Kanbur (2007). He says that they are also sensitive to measurement issues such as price deflators as pointed out by Deaton and Kozel (2005). So he contends that although poverty lines typically have some absolute poverty criterion such as the cost of purchasing a nutritious amount of calories, the nutritional measure can also be misleading. Banerjee and Duflo (2006) have shown that poor people in most cases do not spend adequate shares of their budgets on nutritional food. This makes income as a measure of poverty imperfect. In their study on the measures of poverty, Meyer and Sullivan (2012) looked at three measures of poverty in the United States. These are the official income based measure on the one hand, the supplemental poverty measure on the other and also the consumption based measure of poverty. They reported that their results of their study indicate a strong evidence that a consumption-based poverty measure is more preferred than the official income-

based poverty measure and to the Supplemental Poverty Measure in as far as the determining of who are the most disadvantaged is concerned. The findings also pointed out the question as to whether a wrong measure of income, even when modified to be conceptually closer to consumption, can be a reliable measure of poverty (Meyer & Sullivan, 2012:112).

In deciding the threshold of where poverty starts, most poverty studies focus on income or consumption expenditures measures of the material aspect of individual and household welfare. Thus there is always need to survey households to understand the state of their welfare and hence determine their status in terms of being poor or non-poor. In studying household welfare using income or expenditure, there is considerable ambiguity as to which of these indicators is a better measure of welfare. The use of income is usually considered and may be advocated on the grounds that it better proxies for living standards, which are generally hard to quantify (Atkinson, 1991:1). Another argument in favour of income is the idea that the welfare indicator should measure the opportunities for consumption open to a family rather than actual consumption (Atkinson, 1991:1; Ravallion, 1992:2). However, the income indicator of welfare suffers from a number of flaws. First, when measured over short periods, it may considerably understate or overstate the standard of living due to significant variations in income over time (Meyer & Sullivan, 2012:112). Any data on income shows wide variations depending on the sources. Agricultural families have seasons of plenty and seasons of less income. The actual time of data collection may therefore be biased one way or the other. Another challenge with income measure is that, incomes are expected to underestimate the true welfare because people tend to underreport income or have difficulties in quantifying their earnings if the income comes from self-employment and capital income (Atkinson *et al.,* 1995:1). Issues of savings and borrowed money are also not taken care off as one looked at welfare from the income point of view.

Consumption is often considered to be a better indicator of the general welfare since it is a function of a considered long period consideration. It is also considered to contain smaller measurement error compared with income. People are comfortable

stating what they consume as opposed to how much they get to afford the food. It may also be extended that people are psychologically well placed to mention what they have paid for a product as opposed to where they get the money they paid for the product. The relative merits of one measure versus the other in the case of income and consumption therefore, depend to a large extent on the economic and institutional environment of the country under study. For example, income measures are considered to be a not so accurate measure in less developed countries where much of the population are involved in non-market activities and where income is subject to considerable seasonal variability with much income coming from agriculture. In Malawi for example where more than 80 per cent of the population earns their income from agriculture, and are to a larger extent involved in subsistence livelihood, income measure is less favoured as compared to consumption measure. In many empirical studies, the measure that is favoured for developed countries is income while in developing countries it is consumption (Ravallion, 1992:2; Danzer *at al.*, 2007:7). The income measure for developed countries is a better estimate of household welfare as most people's livelihood come from jobs and well established businesses. Thus the estimate is much closer to their wellbeing than it is with subsistence societies.

Whether emanating from income, consumption or expenditure, most measures that exist in poverty studies in whatever context in question have a monetary quantification at the end to quantify welfare and be able to conduct analysis. The most common measures are income based hence measure poverty in relation to the income levels of individuals or households. Within the income based measures there are different approaches that can be used (Ravallion *et al.* 1991:1). This section examines the poverty measures and justifies the measure selected in this study by highlighting its strength or advantages. The measures to be discussed in this section of the study include poverty line measure that results in head count. The head count is basically the number of people below the determined poverty line, such as 1$ per day or 2$ per day as is usually used by the World Bank. The other measure to be considered will be the poverty gap. Also related to the poverty line concept; is the

poverty gap, this however goes deeper to show the extent of poverty among those below the defined poverty line.

2.4.1 Poverty Line

The poverty line is what economist call a normative concept, as opposed to what reality is on the ground. The line represents the aggregate value of all the goods and services that are considered necessary by some agreed upon standard to satisfy the basic needs of a person or household. In working out a poverty line, the unit of measure has to be clearly defined and adjustments taken into consideration. The first step is therefore, determining the line itself. This could be means of calories requirement in terms of the food poverty line, or basic requirements in general. The second step is obtaining data on the households on the particular aspects needed to construct the line. Where the household is the unit of measure, then common characteristics used are income or expenditure of the household. There after one or more dimensions of poverty, where incidence or extent in terms of severity, can be synthesized using one of the poverty indices (Rio Group, 2006: 35). There are three basic approaches that can be identified in the process of coming up with a poverty line. The sections 2.4.1.1, 2 and 3 that follow present a discussion on the approaches.

2.4.1.1 Absolute poverty line

The first one to be considered is the absolute poverty line. This poverty line is based amount of money needed to acquire the goods and services that satisfy the stated absolute minimum. The absolute poverty line is one of the most important measures of poverty lines because it presents a measure that can be used in comparison scenarios. The definition of minimum is contestable as arbitrary choices of the same can be extremely misleading. The absolute line internationally has been $1 per day as was initiated by Ravallion *et al.* (1991:1). The $1 per day line was revised to $1.08 per day in 1993, but still the 1$ has been used more widely. The UN Millennium development goal of reducing poverty by half was based on the poverty

line of $1 a day. Of late studies have started to use $2 per day as a feasible absolute poverty line (Datt *et al.*, 2000:1; Ravallion *et al.,* 1991:1).

In calculating the absolute poverty line, what is done is basically looking at the cost of buying a basket of what represents the essential items of the household. The basket represents a threshold of certain basic needs. This already has its own challenges as to what are basic needs? if its food shelter and clothes, what kind of food since different societies eat different types of food. What kind of shelter is another question since what is a minimum requirement for a shelter in one country is totally unacceptable in other contexts. The same complications are also of clothes. To get around these issues, absolute poverty lines are just estimate. This however has its own weakness, including the purchasing power differences of different countries and societies. This calls for adjustments in the poverty line, or to consider a relative poverty line. In most countries where an absolute poverty line is used, the estimation of the basket is mostly arrived at using food items. Thus the sufficiency of food intake has a universal threshold of nutritional requirements. This presents a better general definition of what is minimum in real terms and would basically have different nominal amounts based on prices prevailing in different scenarios. Most studies have adopted the Orshansky approach. She contested that if it is not possible to state unequivocally how much is enough or sufficient, it should at least be possible to assert with confidence how much, on an average, is too little. She further notes that such poverty line or thresholds may be seen as arbitrary, but not unreasonable (Orshansky, 1965:1). It is therefore only sensible to derive a threshold from a reasonably consensus point. The commonly used one is how much food is enough in calorie terms, this then dispels the type of quality of food, as long as the calorie content is the same (Orshansky, 1965:1).

In Malawi the absolute poverty line is based on the calculation of how much is required to purchase a defined food basket, which is assumed to contain the minimum requirement of calorie content. A study by Mukherjee (2003) argued that even with Malawi, the absolute poverty line based on food requirements is not uniform across the regions. Mukherjee and Benson (2003:341) found that the

different parts of the country rely on different types of food which in those different contexts cost differently hence the need to have a separate poverty line for each region. In this study, the poverty line was only varied by district in the IHS1 data collection round. IHS2 and IHS3 used a uniform poverty line. This differences in poverty line and hence poverty rate have been addressed in the methodology chapter.

2.4.1.2 Relative poverty line

The relative poverty line is a second line that can be considered besides the absolute one. This second approach to poverty line measure or definition basically adopts the thinking that a poverty line should to a greater extent refer to the average position of the society or the context in which the unit of measure, household for example, exists. A person is poor is therefore considered poor if his or her situation is unacceptable in relation to the society they are in. This poverty line therefore is basically constructed as a proportion of the mean or median income or expenditure or incomes of the whole population in question. The thinking therefore that, absolute poverty lines are lower as compared to relative poverty lines is erroneous. The important difference between the two lines is mainly on how their values change as the distribution in the population being considered changes (Rio Group, 2006:36)

2.4.1.3 Subjective poverty line

The subjective poverty approach is basically arrived at from subjective opinions of people as opposed to the other two poverty lines which are more objective in that individual opinions are not a factor. In coming up with a subjective poverty line, it involves asking people's perception of what they think constitutes the minimum amount of income or expenditure necessary for a household. In this approach, one needs to involve a representative sample in carrying out a survey of these opinions. (Rio Group, 2006:36) There are a number of factors that affect what people consider to be a poverty line. De Vos and Garner (1991:1) found that in the US and the Netherlands, factors that affected the reported minimum incomes were; household income, household composition, age, education, sex, religion among other things.

2.4.2 Issues with the unit of measure

When measuring poverty in a country, the unit of measurement usually used is the household, not individuals. The poverty line process as discussed above looks at the minimum requirement for a household to meet basic minimum requirements in food and non-food requirements. When a household is found to be below the defined threshold, then all the members of that household are assumed poor. This assumption is however not correct, since there is need to take into account the intra household distributional dynamics. The intra household distribution of resources is usually difficult to measure. For example in the determination of the household minimum requirement, household resources are also used as part of the calculation and it is difficult or almost impossible to allocate a portion of the resources to the household members. Since households are used anyway as a unit of poverty analysis, there is need to put households of different sizes and compositions on an equal base. The common way is to have a household per capita; this however assumes that monetary costs for each member's needs are homogenous and that there are no economies of scale. however this is in contrast to the fact the children's needs for food and clothes are not the same as adults and that two people living in the same house may not need additional spending for lighting or to cover their roof (Rio Group, 2006:37). This is why there is need to employ unit equivalences and economies of scale, and different methods have been developed and used in taking these into account.

2.4.2.1 Equivalence scales

The fact that different families have different compositions requires consideration in coming up with a poverty measure. Equivalence scales are measures that attempt to take into account relative cost of living for families of different sizes and compositions. A unit has to e defined for reference or as a benchmark for the equivalence measure. An adult is mostly used sometimes a family of four. In handling these indices usually one considers two elements: first is the consumer unit equivalence which basically takes into consideration the needs of the individual members of the household and the economies of scale. It also take into account the

reduction in marginal cost as the household increases in size. An explicit function can be used as a better way of applying the equivalence scale.

An example is given by an expression with n, as the number of members in the family or household and θ represents economies of scale (θ = 0 corresponds to absolute economies of scale; θ =1 corresponds to the absence of economies of scale). The Statistical Office of the European Community (Eurostat) also employs this type of scale (with θ =0.5) in the measure of relative Another example of a parametric scale that considers consumer unit equivalences is the OECD scale, which can be written as below poverty (Rio Group, 2006: 39).

$$[1.0 \ + \ 0.7(A - 1) \ + \ 0.5K] \qquad ... \qquad (2.1)$$

Where A represents the adults in the household, and K represent children The implication of equation 2.1 is that the adult counted first has a value of 1, each adult that follows has a value of 0.7 to the first one. The children are defined in terms of their age. Each child under the age of 14 is given a 0.5 proportion to the first adult. All the members of the household that are 14 years and above are counted as adults. In a similar way also in Canada's market basket measure the oldest person in the family receives a factor of 1, the second oldest a factor of 0.4, all other family members aged 16 years and older are given a factor of 0.4 and all other family members under 16 years are given a factor of 0.3. A more unique equivalence scale was proposed for the construction of the United States poverty line (Citro & Michael, 1995:1). This scale has the form:

$$(A \ + \ pK)F \qquad ... \qquad (2.2)$$

Where A represents the adults in the household, children are captured by K and, p is gives the proportion of the needs of a child's in comparison to the needs of an adult. The economies of scale factor are represented by F, (Citro & Michael, 1995:1).

There are a number of other methodologies that have been proposed in dealing with the issue of equivalence scale. The Engel method is one such method which compares tow households on their spending. It states that an index can be derived

from comparing the relationship of a proportion of expenditure say on food by the two households. The basis of the scale is on the behaviour of households, Rothbart (1943:1) proposed the use of a group of consumer goods or products that are only used by adults, and he called them, adult goods. These methods have however been criticised by Deaton and Muellbauer, (1986:1) and Tsakloglou, (1991:1) among others. The main criticism being that they have too many limitations in their applicability, (Rio-group, 2006:89).

2.4.3 Construction of poverty lines

Taking into account the consumption equivalence and the economies of scale, the poverty line can be constructed for example in the food poverty line, where consumption equivalences are considered to be relevant than economies of scale. Where food is concerned economies of scale may not necessarily make sense. On the construction of the non-food poverty line, one can calculate different Orshansky multipliers distinguishing items with economies of scale, consumer unit equivalence and those that do not either. Also instead of calculating the Orshansky multiplier one can estimate the total amount of non-food expenditure to be apportioned to each household according to the methodology that was used by Kakwani and Sajaia (2004:1), where the mean non-food poverty line (MNFPL) is equal to sum of the mean expenditures of a given number of non-food components (j) which may include things like clothes and;

$$MNFPL = \sum_j (MNFPL)_j \qquad ... \qquad (2.3)$$

Where $(MNFPL)_j$ is the mean of the j-[th] component. The total therefore of the j-[th] component by the i-[th] household is given by (Kakwani & Sajaia, 2004:1):

$$(MNFPL)_{ij} = k(MNFPL)n_i^{(\theta-1)} \qquad ... \qquad (2.4)$$

The size of the household is given by n_i, θ_j represent the parameter of economies of scale and k is a constant. In this case therefore, when θ_j is equal to 1, every household will be allocated an equal amount of per capita expenditure of $(MNFPL)_j$,

meaning that there are no economies of scale for the j-th component. However when θ_j is equal to 0, the i-th household will be allocated the per capita expenditure of;

$$\frac{(MNFPL)_j}{n_i} \qquad \ldots \qquad (2.5)$$

Where the parameter k is determined in such a way that the mean of $(NFPL)_{ij}$ for all the households is equal to $(MNFPL)_j$. The adjustment for economies of scale therefore according to this formulation does not really change the population mean of each of the components. The per capita non-food poverty line for the-i-th household is then given by the following equation; (Kakwani & Sajaia, 2004:1)

$$(NFPL)_i = \sum_j (NFPL)_{ij} \qquad \ldots \qquad (2.6)$$

Source: Kakwani & Sajaia, 2004:1

If a poverty line is defined as is the case in this study, then the most common measure in practice used by most studies is the headcount index. This is given by the estimated proportion of the relevant population living in a households which has a consumption or income below a predetermined poverty line. For this study the poverty line in Malawi is measured in Malawi Kwacha currency. The Kwacha equivalence to the dollar is also specified for easy comparison with other studies that used the dollar as a measure. In the analysis, per capita consumption is expressed in Malawi Kwacha deflated to February/March 2010 prices. The definition of the poverty line in Malawi as will be used in this study comprises of two components, the food and non-food components. The food poverty line represents the cost of a food bundle that provides the necessary energy requirements per person per day. In coming up with the requirement, the daily calorie requirement was set at 2,400 kilocalories per person. Then the price per calorie was estimated from the population in the 5th and 6th deciles of the consumption aggregate distribution. Lastly, the food poverty line (is) was calculated as the daily calorie requirement per person multiplied by the price per calorie. The non-food poverty line which in this study is just a component of the poverty line, represents an allowance of basic non-food needs. It is estimated as the average non-food consumption of the population whose food

consumption is close to the food poverty line. The total poverty line is simply the sum of the food and non-food poverty lines. More on the poverty line as used in the Malawi IHS 3 will be discussed in detail in chapter four of this study. Suffice to mention at this point that the poverty line for Malawi is set at MK37, 002 per annum (approximately US$148) and the population that has total consumption below MK37002 is deemed poor and the ultra-poverty line is set at MK22, 956, hence the population with total consumption less than MK22, 956 is considered ultra-poor (NSO, 2012:204).

2.4.4 Headcount index

This is by far the widely-used measure of poverty. The head count index essentially measures the proportion or percentage of the population that is counted as poor. This is the easiest number to get although simplistic as given below;

$$H = \frac{q}{n} \qquad \dots \qquad (2.7)$$

Where H is the Head count index, q is the number of people with incomes below the poverty line and n is the population size. This measure is very easy to interpret and communicate (Ravallion, 1996:1330)

The World Bank (2005:1) pointed out that, the greatest advantages or strengths of the headcount index are that it is simple to construct or formulate and easy to interpret and understand. These are very useful and important characteristics of a measure. The strength notwithstanding, the measure has also a number of weaknesses: the first and probably important weakness is that the headcount index does not show the intensity of poverty in the population under consideration. Dalton (1920:1) presented this scenario to demonstrate the point. If foe example states that transfers from a richer to a poorer person should improve the measure of welfare. Here if a somewhat poor household that is just below the poverty line were to give to a very poor household that's way below the poverty line, the headcount index would not show any change, even though it is reasonable to suppose that poverty overall has been reduced in the poorer household. Some argue that if it is to be meaningful,

the headcount index should imply that there is some discontinuity in the distribution of welfare or incomes at about the poverty line, so it makes sense to speak of the poor and the non-poor. In practice, such a jump is not found (Ravallion, 1996:1330).

The Second weakness of the head count index is that it does not indicate how poor the poor are, and hence does not change if people below the poverty line become poorer. It groups all those below the line as having equal challenges. It is therefore easy for policy makers to just target those just below the poverty line, to help them jump to the other side of the threshold with less effort that it would be with those at the bottom (World Bank, 2005:1).

Thirdly, the poverty estimates should be calculated for individuals and not households. If 20 percent of households are poor, it may be that 25 percent of the population is poor (if poor households are large) or 15 percent are poor (if poor households are small). The only relevant figures for policy analysis are those for individuals. But survey data are almost always related to households, those that include characteristics of individuals in the household and tend to be too long and against the recommended time one needs to hold a respondent before the close off. Therefore, in order to measure poverty at the individual level there is always need to make a critical assumption that all members of a given household enjoy the same level of well-being. A household head enjoying the same level with the youngest member of the household is a farfetched idea. This assumption may not hold in many situations. For example, some elderly members of a household, or girls, may be much poorer than other members of the same household (World Bank, 2005:15). Young people may be poorer that order people or visa-versa. In other cultures the household head is given the chance to eat first before any member of the household can touch the food. In other cases, say where there is a new baby, the baby may be given a higher priority. For instance the house hold may decide to forego a better and expensive type of food dish in order to use the money to buy child supplies like milk and clothes. In reality, consumption is not at all evenly shared across household members. In any case the issue should be what can be done to achieve equal or fair

share of consumption in households, especially households that do not have enough which are usually in the poor category (Rio Group, 2006:39; World Bank, 2005:16).

The headcount index does not explain anything about what has been happening to the distribution below the poverty line. The extent of the poverty or the reduction in the severity is not known out of the percentage given by the head count. For example, if the poorest person becomes poorer then the headcount index will not change or show it. The poverty gap index which is the mean income shortfall below the poverty line as a proportion of the line would reflect better the changes in average levels of living among the poor. However, it will not reflect changes in distribution among the poor. Various measures of poverty have also been proposed that penalise inequality among the poor. According to Ravallion and Chen (2003) a measure that is first of its kind that is sensitive to distribution is the index that was introduced by Watts (1968). In its discrete version it takes the form:

$$W = \frac{1}{N} \sum_{i=1}^{q} [\ln(z) - \ln(y_i)] \quad \dots \quad (2.8)$$

Where N is the number of individuals in the population that are indexed in ascending order of expenditure or income. And those individuals represented by q who have incomes or expenditure y_i below poverty line Z are summed up together (World Bank, 2005:79). This is the population mean of the log of the ratio of the poverty line to censored income, where the latter is actual income for those below the poverty line and the poverty line for those above it. Zheng (1993:1) demonstrated that the Watts index is the only index that comes close to satisfy all the expectations for an ideal poverty measure that have been proposed in the literature.

The Watt Index although seemingly complicated can be straight forward in measuring the rate of pro poor growth over time. Given for a time period t it is given by the following as was discussed in Ravallion and Chen (2003:1):

$$W_t = \int_0^{H_t} \log(\frac{z}{y_t(p)}) dp \quad \dots \quad (2.8)$$

Where $y_t(p)$ is the quantile function (obtained by inverting the cumulative distribution function $p = F_t(x)$ at the pth quantile) and $H_t = F_t(z)$ is the headcount index. It is readily verified that the Watt function above can be written in equivalent form as follows (Ravallion, 2004:24).

$$W_t = Log \left(\frac{z}{y_t^*}\right) \dots \qquad (2.9)$$

Where:

$$Log\ y_t^* \equiv \int_0^{H_t} log\ y_t(p)dp + (1- H_t)log\ Z \dots \quad (2.10)$$

is the mean of log censored income (Ravallion, 2004:24). Now, taking cognisance of the fact that there is a degree of uncertainty about the location of a poverty line, it is important to look at impacts of aggregate economic growth over a wide range of the distribution. A very important tool for this purpose is the growth incidence curve introduced by Ravallion and Chen (2003:1). This gives the rate of growth over the time period under consideration at each percentile of the distribution (Ravallion, 2004:24). The Watts index is very useful in this study as it provides a possibility to disaggregate the incidences and effects of growth and help in determining the extent of the pro-poorness of the growth incidence.

Ravallion (2004:24) explains that if one calculates the area below the incidence of growth curve up to the point where the headcount index is drawn, then one can obtain the total growth in incomes of the poor over the relevant period. The Ravallion- Chen (2003) termed rate of pro-poor growth as the mean growth rate of the poor. Basically what is does, is to give the change in the Watts index per unit time divided by the headcount index. Notice that the mean growth rate of the poor is not the same thing as the growth rate in the mean for the poor, which will not in general be consistent with even the direction of change in any sensible measure of the level of poverty (Ravallion & Chen, 2003:1). While the Watts index has the most attractive properties of any poverty measure, it is still the only one of the measures found in the literature. Another example of a distribution-sensitive measure is the popular Squared Poverty Gap (SPG) in which individual poverty gaps are weighted

by the gaps themselves to penalise inequality amongst the poor (Foster *et al.*, 1984:1). If we consider instead any measure within the Atkinson (1987:1) class of additive measures of poverty (including the headcount index, the Watts index and SPG) then one can define a measure of pro-poor growth as the weighted mean growth rate, as obtained by weighting each point on the growth incidence curve with the weights appropriate to the specific measure of poverty used (Kraay, 2003:1) in (Ravallion, 2004:24)

2.4.6 Poverty Gap

Measures of poverty are mostly concerned with the number of people counted to be poor, the extent of the poverty and the differences between the poorest and those close to the line are not captured. The poverty gap measure addresses those weaknesses by going a step further to show the gap between the poor and the poverty line. Poverty gap ratio indicates the average distance between the income of those in poverty and the poverty line. The poverty gap on its own does not present a thorough picture of poverty, but works well when used together with the head count index. In fact, the gap cannot be calculated without the head count being known first. The poverty gap can be given by the two formulas below (Rio Group, 2006:96)

$$PG = H * I \qquad ... \quad (2.11)$$

Or

$$PG = \frac{1}{n} \sum_{i=1}^{q} [\frac{z - y_i}{z}]^\alpha \quad ... \quad (2.12)$$

Where PG is the poverty gap which measures the relative income shortfall of the poor people as in relation to the value of the poverty line. It is then weighted by the incidence of poverty. Basically it gives the quantitative distance between the poverty line and where the poor person is. In equation (2.11) is the income gap ratio, which is defined as (Rio Group, 2006:96)

$$I = \frac{Z - \bar{y}}{Z} \qquad \dots \quad (2.13)$$

Where Z stands for the poverty line and $\bar{y}$ represents the mean income of the poor population

2.4.5 The Severity or the FGT2 Index

This index was proposed by Foster, Greer and Thorbecke (1984:1). It is a parametric family of poverty measures:

$$P_\alpha = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{z - y_i}{z}\right)^\alpha \qquad \dots \quad (2.14)$$

Where α greater or equal to 0 can be interpreted as an inequality aversion parameter, which assigns varying weights to the difference between the income of each poor individual and the poverty line. When $\alpha = 0$, the FGT measure is equal to the headcount index; when $\alpha = 1$, it is equal to the poverty gap index. So as α increases beyond the value of 2, more weight is progressively given to incomes that are far from the poverty line. As α gets larger and larger towards infinity, the poverty measure depends entirely on the distance of the poorest person's income to the poverty line. A measure that has been used hugely in the measures of poverty is P_α with $\alpha = 2$ or also known as the FGT_2, as it satisfies the transfer axiom, as well as the focal and monotonicity axiom. Every index of the FGT family of measures is also additively decomposable. For an n size of population divided into m subgroups of size n_j and with income distribution y_j, FGT2 is given by the following equation (Rio Group, 2006:97):

$$FGT_2 = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{z - y_i}{z}\right)^2 \qquad \dots \quad (2.15)$$

The properties of the FGT_2 index make it very useful for poverty analysis, its complexity not withstanding compared to the headcount and poverty gap measures. This is the measure that was utilised in the calculation of the poverty measure in Malawi where the poverty data for this study will be taken from (NSO, 2012:205).

2.5   THE HUMAN POVERTY INDEX (HPI)

Most of the poverty measures rely on income or a monetary aspect of wellbeing. This is a mirror reflection of a measure of a country's wellbeing with GDP. However wellbeing is a function of a number of things besides money, this is why a country's development level is well ascertained by the use of the Human development index (HDI) proposed by the UNDP (2011).

According to UNDP (2011:1) from a human development perspective, poverty means more than the lack of what is necessary for material well-being. Poverty transcends the absence of money; poverty means that opportunities and choices most basic to human development are denied. Thus a person is not free to lead a long, healthy, and creative life and is denied access to a decent standard of living, freedom, dignity, self-respect and the respect of others or from others. These then cannot be captured properly by a measure of money. The UNDP has over the years also proposed a measure of household deprivation known as the Human poverty Index (HPI). The HPI represents the extent of poverty in a country. It uses indicators of the most basic dimensions of deprivation: a short life, lack of basic education and lack of access to public and private resources (UNDP, 2013:1). There is HPI- 1 and HPI – 2; the HPI-1combines measures of life expectancy, child nutrition status, access to improved water sources, and income (Gumede, 2010:1). It is the contention of the HPI proponents that poverty is not just a financial state. Being poor affect life in many different ways. The human poverty index uses indicators that capture non-financial elements of poverty, such as life expectancy, adult literacy, water quality, and children that are underweight when you consider the HPI - 1. The 30 territories of the Organization for Economic Cooperation and Development use a different index, HPI– 2 which includes income and long-term unemployment; and not water quality or underweight children. This implies that the poor in richer territories are materially better off than those in the developing world (Maddison, 2002:1)

Gomede (2010:7) contended that the Human Poverty Index (HPI), introduced in 1997, by the UNDP was an attempt to bring together in a composite index the different features of deprivation or lack of wellbeing in the quality of life to arrive at an

aggregate judgment on the extent of poverty in a community. In calculating HPI-1 the following equation is used as adopted from Gomede (2010:8):

$$HPI - 1 = \left[\frac{1}{3}\left(p_1^\alpha + p_2^\alpha + p_3^\alpha\right)\right]^{\frac{1}{\alpha}} \ ... \ (2.16)$$

Where p_1^α is the probability at birth of not surviving to age 40 (times 100), p_2^α is Adult illiteracy rate, p_3^α is Un-weighted average of population not using an improved water source and children under the weight-for-age, α = 3 (Gomede, 2012:8). The importance of the HDPI is embedded in its ability to compare with the Human Development Index, which is widely used as a measure of development. The other measures of poverty have a weakness of over reliance on the income aspect of wellbeing.

2.6 EQUITY AND POVERTY

Equity is concerned with the fairness by which resources are made available to individuals in the society. The process of considering poverty and efforts to deal with its reduction cannot be successful if issues of equity are not taken into account, especially if economic growth is considered to be the source of poverty reduction. . A number of poverty reduction initiatives that exist in many countries have a redistribution aspect attached to them. This is emanating from the understanding that the global resources are enough to have each and every individual above poverty. The fact that other people live in poverty and extreme deprivation is a result of others having too much to themselves, more than they need to live a comfortable life. The issue is who decides how much and who should have what is the reasoning behind equity and justice theories (Konow, 2003: 1188). Theories of Justice have a philosophical basis but are very useful and have been used in economic debate over the years to understand issues that go beyond basic capitalistic foundations of economic theory. The field of education economics, environmental economics and health economics among others go beyond the optimal uses of resources for human satisfaction, and appeal to the human dignity of considering the sustainability of our way of life. Considerations of poverty are in the same category, where societies are

concerned of the other members who do not have all that takes to live a comfortable life.

The meaning of "Justice", ambiguous and difficult as it may, has been the centre of discussion for years. This is as a result of the need to incorporate such issues in the economic discussion. As Konow (2003:1188) pointed out, justice arguments have widely invoked to improve theoretical and empirical analysis in nearly every field of economics. The need to look at issues from a positive view as opposed to the normative view in economics have proven biased against those that have no access to capital in the contemporary capitalist world, where capital whether physical or human is the most important aspect of a better life style. The need to therefore consider what should be instead of what is becomes a very important consideration in economic debate. Konow (2003: 1188) pointed out the following when explaining why justice theories have become part of economic discourse:

> "They have been incorporated into game theory (Rabin, 1993); fairness predicts the deviations from pure self-interest observed in many laboratory experiments (e.g., Werner Güth and Reinhard Tietz, 1990). Its impact has also been cited in many real-world contexts, including the intermittent failure of product markets to clear (Daniel Kahneman Jack Knetsch, and Richard Thaler, 1986); resolution of social choice problems such as locating nuclear-waste facilities (Felix Oberholzer-Gee, Iris Bohnet, and Bruno Frey, 1997); public-utility regulation (Edward Zajac, 1985); and labor unemployment due to efficiency wages (e.g., George Akerloff and Janet Yellen, 1990)". The view that "By now we have substantial evidence suggesting that fairness motives affect the behaviour of many people" (Ernst Fehr and Klaus Schmidt, 1999) is expressed in mainstream economics. This contrasts with the traditional belief of many economists that justice is chimerical or amorphous. A more sympathetic stance placed it outside the domain of economics, better left to philosophers, political scientists, or sociologists. There has been a steady trend, however, of increasing interest in and acceptance of justice in the economics profession, even partially displacing efficiency. This is not to say,

of course, that economists are or should be abandoning their traditional (Konow, 2003:1188).

The point in Konow's (2003) argument is that there is no way it can be insinuated that issues of justice which guide theories of equity can be entirely ignored in economic discussion especially when looking at poverty. There is and will always need to have an outsider, an impassion judge of human behaviour to direct human action even in economics. Two main areas of justice or equity exist in the literature, the distributive equity which is concerned with the outcomes or end positions, hence looking at theories of external efficiency and procedural equity where emphasis is on the fairness of the processes through which society allocates its scarce resources. Both these areas of justice are very relevant to poverty reduction considerations. In order for poverty reduction policies to have significant effect, there is need to realise the importance of equitable systems that do not favour one section of the society at the expense of other sections of the society (Peaceful planet, 2013:1). Some of the theories to be considered in this paper to try and draw a relationship between poverty reduction and equity are, the Egalitarianism, Marxism and the need principal among others.

2.6.1 Egalitarianism

The egalitarianism is one of the oldest and most primitive theories. It relates equity to equality in the sense that equity can only be achieved with distributions that ensure identical outcomes. Contends that there is no difference or there should never be any difference between the two. With the egalitarian notion to equity, only interventions that lead to redistribution of resources in such a socialist way that ensure identical outcomes are acknowledged as making a difference. This in economics is a de-motivation to work and innovation and hence not useful. Even with the desire to improve the circumstances of those in poverty, there is need to make sure that justice is served. The egalitarian way is not fair to what most people would consider just justice. Survey studies of macro-justice or of justice at the societal level, in a consistently uniform way show strong opposition to equal outcomes. In the U.S. where the general public was asked about the just distribution

of income, only 7 per cent of 938 respondents to the survey reported in McCloskey and Zaller (1984:1) and 3 per cent of the 1415 respondents in Kluegel and Smith (1986:2) support complete or near equality of income. Actually Jasso (1999:1) report based on probability samples (N=8810), that, if people received what they consider just, the distribution of income would be less, not more, equal than the actual distribution in eight of thirteen countries studied.

For example in the surveys reported in Konow (2003:1193) which were designed and conducted to produce meaningful results and to avoid subject pool and response biases in line with sound practices for survey research (Krosnick, 1991:1). Fairness wording was explicitly used for purposes of validity, i.e., to ensure the instrument measures what it claims to measure, an important issue given evidence that what is "fair" may differ from what is good or what people prefer. The results show that to a greater extent people don't consider identical or equal distribution as fair or just.

2.6.2 Marxism

Marx seems to associate justice with rights and proportionality, which lead to inequalities. He therefore disagrees with the notion of justice as it is understood; he endorses the communist distributive principle, from each according to his ability, to each according to his needs (Marx, 1875:531). The Marxists ague that justice is a glorified expression of existing economic relationships, which in their perspective is a promotion of inequality and hence a way to maintain the poverty levels of the existing structures. In this sense therefore, poverty reduction strategies that aims at only transferring cash to the poor and not empowering them to earn an income are not a solution to poverty. In most cases these policies are not sustainable or they end up draining the sources of the mitigating mechanism and its income base. Welfare programs or safety nets are supposed to be a cushion in times of desperate need as opposed to a life style. Child support programs that lead to teen pregnancies are a disservice to society. There are many welfare programs in most developed countries, and some middle income countries. In South Africa for example, there are programs for child support, grants for the elderly all intended to assist the most vulnerable in

society. In very poor countries like Malawi, such programs do not exist in a strict sense. There are projects by non-governmental organisations that are aimed at assisting the poor, especially orphans and people living with HIV.

2.7   POVERTY AND GROWTH LINKED

In his paper on the pace of economic growth and poverty, Bourguignon (2000:1) stated that part of the debate around the turn of the twenty first century around poverty reduction strategies is concerned with the issue of the actual contribution of economic growth to the goal of poverty reduction. There is no doubt that faster economic growth is associated with faster poverty reduction. Quoting Ravallion and Chen (1997) he pointed out that they estimated that, on average, the corresponding elasticity of poverty incidence with respect to the mean income of a population is around 3, i.e. a one per cent increase in mean income or consumption expenditures reduces the proportion of people living below the poverty line by 3 per cent. The measure of poverty may be a challenge as the mean incomes are always affected by the effect of the outliers. That notwithstanding, as emphasised in the World Development Report (2000) on "Attacking Poverty", however, there seems to be some pronounced heterogeneity across countries in the way economic growth actually translates into reduced poverty. If reducing poverty is seriously taken as a world policy objective, understanding the causes of that heterogeneity is important. This heterogeneity makes it difficult to generalise the growth coefficient on poverty if the study is based on a wide range of countries that attribute these differences (Bourguignon, 2000:1).

Aggregate economic growth has different relationships with poverty depending upon distributional changes during the process of growth and on initial inequality according to Aigbokhan (2008:1). This is because the way new wealth is distributed is a function of the existing income distribution dynamics. The owners of capital will gain more if growth is coming from a capital intensive sector, in the same way, famers will benefit if the growth is emanating from agricultural production and good prices on the market. In his analysis of the implications of inequality on growth and its bearings on poverty, Easterly (2006) tested for the inequality growth relation through one of the

control variables applied to equation as used by the contributions by Dollar and Kraay (2000:1; 2001:2). Using the Deninger and Squire database, they managed to generated considerable interest regarding the interaction between growth and poverty. Dollar and Kraay (2000:1) argued that growth has in fact been beneficial for the poor. Thus in their work which has been cited as the most influential in the growth poverty debate in the last decade, they concluded that there is a one to one relationship between economic growth and poverty reduction. Using the most up-to-date data available in 2000 on the income of the lowest quintiles for a number of countries, their results provide strong support for the proposition that growth is good for the poor and that they benefit at least as much as the other quintiles from growth.

Hossein and Weiss (2002:231) contended in their analysis of the growth-poverty relation, that they needed not to analyse changes in poverty measured by the number of the population below an absolute poverty line due to the absence of comprehensive cross country data on the headcount index. Instead they used the same proxy for poverty as that in Dollar and Kraay (2000:1). In that regard they defined poverty in relative terms as the average income of the bottom quintile of the distribution, and change in poverty was measured by the change in the average income of this quintile. Although this is not an absolute poverty measure, it should also be remembered that, the cross-country headcount index based on US$1 a day is itself subject to a number of limitations. Growth of income of the poor, defined as those in the bottom quintile, was found to be most rapid in Singapore and slowest in the Philippines, with each of the other three countries having an annual growth of the income per capita of the poor of around 4 per cent according to this study by Hossein and Weiss (2002: 250). The main question they considered in the analysis was whether the registered performance could be related to FDI inflows. Their basic growth-poverty model followed that of Dollar and Kraay (2000). This indicates the near agreement in the literature of the difficulty in accessing the right kind of data to conduct a robust analysis devoid of limitations (Hossein & Weiss, 2002:231).

In principle, household surveys can address such questions, but the coverage and quality of surveys are uneven. As a rule, the poorer a country, the more difficult it is

to know just how poor its people are and whether their living standards are improving over time. Other factors, such as the openness and size of the country, influence the availability and quality of data. For example, the average cost of a representative household survey falls with the size of the population represented. Data on poor people have historically been wanting relative to most other data. For example, the World Bank's World Development Reports for 1979 and for many years after only give distributional data from house-hold surveys for 20 or so developing countries. Yet macroeconomic aggregates are available for almost all countries (Hossein & Weiss, 2002)

A link between growth theory and poverty reduction is clear in the stages of growth where the positive outcome of escaping a poverty trap is seen in the take-off stage. Sachs (2005) and the European Commission (2005) state that it is feasible for aid to cause enough of a growth acceleration in Africa to meet the MDG of halving the poverty rate in Africa by 2015. The European Commission then says that this would require African growth over the next 10 years to be at least 8 per cent per year (EU, 2005:4). This take-off is equivalent to about 6 per cent per capita growth, from a starting point of stagnation over the last few decades. Easterly (2006:1) pointed out that in their approach to dealing with poverty reduction, the World Bank (2005:1) and the UN Commission for Africa (2005:1) have a similar target of 7 per cent GDP growth- 5 per cent per capita growth- for Africa to reduce poverty by half over a period of 10 years.

In dealing with the relationship between poverty and growth Krishnakumar and Ugarte (2011:1) argued that the regression using mean incomes is not able to disentangle the impact of different changes that occur in growth and their impact on the income of the poor. They contended that there are two different aspects to aggregate growth: the first one is associated with increases in the central tendency of the distribution (for a given dispersion), and the other one associated with changes in the dispersion (for a given mean/median income). They show that the first one is relative poverty- neutral in the sense that as median income increases, income of the poor increases proportionately provided that the dispersion does not

change. The latter, however, is very important in as far as pro- or anti-poor growth is concerned as contended by Krishnakumar and Ugarte (2011:2). In this regard therefore, Krishnakumar and Ugarte attempted to present a mathematical hence theoretically derive the elasticities of the mean and median incomes of the poor with respect to those of the population. They made an assumption of the existence of a right- skewed income distribution and examine whether the regression with mean incomes as is usually done is able to capture the values that are true for the parameters of impact of the aggregate growth on incomes of the poor (Krishnakumar & Ugarte, 2011:3).

The argument from Krishnakumar and Ugarte (2011:3) is based on the fact that a mean is a volatile measure and that considering a median would present a more reliable measure of poverty response to growth. Although highly mathematical, they clearly presented a succinct relationship between poverty and growth. The measures of poverty as a 20 percent lower quintile of the population's income distribution was adopted from Dollar and Kraay (2001:1; 2004:2) and these will be used further in this study in chapter five under the methodology of the study.

2.8   SUMMARY AND CONCLUSION

This chapter has presented an in-depth analysis of the theories of poverty, poverty measures and perceptions of the causes of poverty. The chapter has made an effort to point out the fact that the head count as a measure is commonly used based on different poverty lines which vary from country to country. Other measures of poverty have also been discussed in detail pointing out the various strengths and weaknesses of each measure. The first part of the chapter however, begun with a discussion of theories of growth. The basis of study was to discover how changes in income overtime translated to poverty reduction at district level. However to justify the premise that there have been changes in income, there was need to show changes in the income. The first part has dealt with a discussion of theories of growth to put in context the connection between poverty reduction and the channels of poverty reduction discussed in chapter three.

The main issue in the chapter has been the discussion of the measures of poverty. The section of poverty measures in this chapter has discussed different measures of poverty. Some of the measures discussed include, the poverty line measures, whether based on the absolute, relative or subjective poverty lines. And beyond the poverty lines, the chapter discussed the head count measures and poverty lines, pointing out the strengths and weaknesses of the same.

The chapter has also looked at the human poverty index as a measure of poverty where it has been pointed out that most of the poverty measures rely on income or a monetary aspect of wellbeing. This is a mirror reflection of a measure of a country's wellbeing with GDP. However wellbeing is a function of a number of things besides money, this is why a country's development level is well ascertained by the use of the Human development index (HDI) proposed by the UNDP, And the HPI is a measure of poverty with a wider range of aspects as opposed to one dimension of income.

CHAPTER 3   THEORETICAL AND EMPIRICAL LITERATURE REVIEW ON THE CHANNELS OF POVERTY REDUCTION

3.1   INTRODUCTION

Poverty reduction can be experienced differently for different countries (Bourguignon 2000:1). For example different countries may have different paces of poverty reduction and may be emanating from different sources (de Janvry, 2000:267). The pace and distribution of poverty reduction depends on a number of factors; these may include the rate of economic growth being experienced, initial distribution of income and other basic requirements for a society (Fields, 2001:1). According to Bourguignon (2000:1) there is a link between the distribution of relative incomes and the reduction of poverty. Hull (2009:69) argues for a consideration of employment, type of employment quality where better jobs in order to have a strong poverty reduction strategy. There is need therefore to analyse the channels through which poverty reduction is most effective. This chapter presents a review of the literature on channels of poverty reduction. Studies around poverty reduction have revealed a number of factors that can be looked at as channels of poverty reduction. These factors include; education levels of a country, employment rate in different sectors of the economy and the dynamics of the wage rate (Islam, 2004:1), enterprise of the households and access to capital for people of different income brackets (Shastri, 2009:2), agricultural productivity especially for developing countries (Chirwa, 2004:1) among other things.

Other studies have argued that there are requirements that have to be in place first for a country to achieve maximum poverty reduction. Bourguignon (2001:2) has shown in his study that inequality is a very important determinant of how effective poverty reduction efforts can be. He argued that there are pronounced heterogeneity across countries in the way economic growth translates to poverty reduction. In that case, economic growth is considered a necessary condition for any sensible poverty reduction to take place. According to Bourguignon (2003) the distribution of income in different countries is the source of the heterogeneity in poverty reduction

(Bourguignon, 2003:1). In reference to inequality, Bigsten and Shimeles (2003:1) noted that inequality in Africa is quite high partly due to the underlying distribution of assets particularly land, physical and human capital. Where these essential components of production are not equally distributed, efforts to reduce poverty through inducing economic growth may not be fruitful.

Ravallion and Datt (2002:2) in a study of growth and poverty in India found that inequality that exists in interaction with literacy, farm productivity and asset distribution affects the relationship between growth and poverty. Bigsten and Shimeles (2003:1) using panel data found that land ownership, education, type of crops, dependency and location to be important determinants of poverty in Ethiopia. In addition, Bigsten and Shimeles (2003:3) found that the production of a non-traditional export crop increased households' per capita expenditure and reduced the probability of falling into poverty or of being chronically poor and increased the chance of escaping poverty (Bigsten & Shimeles, 2003:3). Studies conducted in Malawi by Mukherjee and Benson (2003:339) showed that the main determinants of poverty in the country are education, occupation of the household head, per capita land holding, type of crops, diversification out of maize and tobacco, participation in public works programs and paid employment opportunities among other things. The same result was also reported by the National Economic Council (NEC), *et al.* (2001:1). Looking at the per capita increases, Mukherjee and Benson (2003:350) found that increasing cultivated area by an acre per capita increases per capita consumption by 13 – 17 percent. These findings present a direction and a starting point for a deeper analysis into the channel of agricultural production and or productivity. In most studies, economic growth is seen as a necessary condition, where it is assumed that in the absence of growth, these channels of education and agricultural production etc. cannot be effective or even present at all.

The fact that growth is associated with increase in the average incomes of the population is well known (Dollar & Kraay, 2000). The hypothesis that the increase in average income can be interpreted as a reduction in poverty is suspect and needs empirical verification. Literature, like Agrawal, (2008:1) and Bourguignon, (2003:3) is

full of evidence as regards the direct relationship between economic growth and poverty reduction. It is however the channels through which poverty reduction is felt, that are necessary for efforts of poverty reduction to be properly focused. This section of the literature examines the channels of poverty reduction and to an extent includes the economic growth-poverty reduction trajectory. The channels to be discussed in this section are the ones examined in the econometrics model in chapter five. These channels includes; employment rate, education levels, agricultural production, enterprises land access to loans linking it in terms of foreign direct investment (FDI) and trade as was discussed by Hossein *et al.,* (2002:231).

3.2   EMPLOYMENT AND POVERTY REDUCTION TRAJECTORY

Sustainable employment is one of the best routes out of poverty (ILO, 2008:5). Islam (2004:1) points out that assistance in designing and implementing strategies and programmes for job creation can contribute to the objective of poverty alleviation or reduction in situations of low income and high unemployment and underemployment. The recognition of the importance of employment in dealing with poverty by the International Labour Organisation (ILO, 2008:5) signifies the need to look at employment as a channel for poverty reduction. Employment as a channel of poverty reduction is discussed first.. This channel is directly linked to the education channel discussed in sub-section 3.4.2. Islam (2004:1) explains that the experience of countries that succeeded in reducing poverty significantly indicates the importance of high rates of economic growth in achieving this. High growth, however, is not a sufficient condition for poverty reduction; the pattern and sources of growth as well as the manner in which its benefits are distributed are equally important from the point of view of achieving the goal of poverty reduction. And employment plays a key role in that context (Ibid:1).

The link between employment and education emanates mainly when employment is looked at in the formal sense. However, in most developing countries where the poor are in majority, employment that changes the lives of the poor is the one that is concentrated in informal sectors or unskilled labour sectors according to Loayza and Raddatz, cited in Hull (2009:69). This sub-section about employment attempts to

shade more light on both the formal and informal sectors of employment and establish the employment-poverty reduction trajectory.

The important role that employment plays in uplifting the lives of the poor is evident in literature (Islam, 2004:1; ILO, 2008:5, Hull 2009:69). The fact that economic growth without the creation of jobs is a recipe for more unequal distribution and hence more relative poverty has been proven by studies conducted in a number of countries both if Africa and across the globe. A Study by Bourguignon, (2004:1) for example, showed that income distribution determines the extent to which economic growth affect poverty reduction. Dollar and Kraay, (2000:1; 2001:2) also pointed out the heterogeneity in the responses of poverty to economic growth which is a result of different inequalities existent in different countries. Other studies that found related results are Gugerty and Roemer, (1997:1) and Hull, (2009:69). According to Hull (2009:70) jobs are an important aspect in the effort of poverty reduction. She highlighted the extent of the need to clearly understand how employment and the quality of employment should be factored in, in any poverty reduction discourse to ensure maximum results of any poverty reduction effort.

Other studies have demonstrated that the sectoral pattern of growth will affect the extent of poverty reduction. Loayza and Raddatz (2009 cited in Hull 2009:69) found that economic growth that creates employment in labour intensive sectors with unskilled labour contributes to poverty reduction more than growth that is concentrated only in the high skilled labour sectors. This can be explained by the fact that most poor people have very low qualifications or years of schooling or no education qualification at all and hence low skills. The link between education attainment and hence skills level, with economic background or family income is ubiquitous in the literature. Studies by Conley (2001),; Morgan and Kim (2006); Pfeffer (2011) and Pfeffer and Hällsten (2012) have shown the important role of parental wealth on education attainment. Hence a growth in high skill sectors would not benefit the very poor directly who according to Pfeffer (2012:6) are likely to have low educational attainment and hence lower skills.

In their study, Satchi and Temple cited in Hull (2009:69) found that growth in agriculture may increase poverty as this may indicate a reliance on subsistence farming while growth in the urban sectors may cause poverty to fall considerably. According to Loayza and Raddatz (2009:3), whether they are subsistence farmers, salaried workers, or self-employed entrepreneurs, poor people derive most of their income from work (Loayza & Raddatz, 2009:3). This basic fact means that the level of employment, the quality of jobs, and the access which the poor have to decent earnings opportunities are crucial determinants of poverty reduction. World Bank (2005:1) research found that access to non-farm rural employment and informal urban employment were important factors in some countries but not in other countries of the researched 14 countries which experienced pro poor growth in the 1990 (Hull 2009:70).

In his argument for employment for poverty reduction, Islam (2004:3) maintains that conceptually, the linkage between output growth -which is the main source of poverty reduction in the literature- employment and poverty can be analysed at both macro and micro levels. At the macro level, the linkage between poverty in its income dimension and output growth can be understood in terms of the average productivity of the employed work force which in turn gets reflected in low levels of real wages and low levels of earnings in self-employment. At the micro level of a household, the same linkage between poverty and employment operates through the type and low productivity of economic activities in which the earning members of a household are participating in, the low level of human capital of the members of the workforce, the dependency burden that limits participation in the workforce, and the mere availability of remunerative employment (Islam, 2004:3). This is where the study on Malawi becomes significantly crucial as focus is put on the type of jobs people are involved in. Employment can be a useful channel of poverty reduction if there is a growth of employment inside the sectors that the poor participate. The ILO (2008:2) argued that employment is useful where jobs are being created in the labour intensive industries where the poor are in majority. In Malawi where the employment rate figures are very high, agricultural sector represents close to 90 percent of the stated employment (NSO, 2012:1). In the statistical year book of Malawi,

unemployment figures are in record lows, as indicated in tables 4.5 and 4.6. Most of these people that are recorded as employed would be considered unemployed in a serious sense, because most of these are subsistence farmers (NSO, 2012:34). Hull (2009:75) states that the intuition that jobs matter for development has not been lost on the governments of low income countries and the vast majority of national development strategies look to employment generation as a major channel for poverty reduction, it however matters what is considered employment, the quality and the sector of the employment under consideration.

Employment is a condition of having paid work. Employment rate is defined as the ratio of the people in employment vis-à-vis the labour force. There are varying definitions of what the labour force constitutes. A broad definition of the labour force looks at the people above the age of 15 years.

Hull (2009:69) when assessing the relationship between employment and poverty in Cambodia argues that a good poverty profile make employment targeting possible. The ability of the vast majority of households in Cambodia to escape poverty would depend on their earnings from employment. The highest poverty rate was found among people living in households headed by farmers (45 percent in 1993/94 in Cambodia). By contrast, households headed by someone working for the government were least likely to be poor; in these occupations the poverty rate was 20percent (1993/94). This then suggested that policies that aim to reduce poverty through enhancing income-generating capabilities were supposed to be targeted towards the agricultural sector.

In order to have a well-focused employment targeting approach, a clear framework has to be used. In her Study Hull (2009:74) proposed a framework. She argued that it is of great importance to dissect the employment scenario in a country to ascertain if the policies implemented so far in the country take cognisance of the importance of employment and the quality of the employments being created or that prevail in the economy. The section that follows lays out the framework as was presented in Hull (2009).

3.1.1 Hull's framework on the link between employment and poverty

There are three main objectives that the framework intends to achieve. It aims to help analysts understand first, how the sectoral pattern of growth affects its poverty impact and second, whether employment-intensive or productivity-intensive growth is more important. Finally, the framework aims to shed light on the broader policy and institutional environment which might facilitate the poor's participation in growth. Thus it enables policies to be directed at the area that will exhibit the most impact (Hull, 2009:74).

Hull (2009:73) contends that while correlations may not necessarily imply causality, this framework offers a more practical and feasible response to the absence of a thorough analysis of even correlative relationships in this area. It therefore can provide empirical input into debates on how the quantity and quality of jobs are linked to poverty. Below are the three steps involved in the framework.

FIGURE 3.1 EMPLOYMENT AND POVERTY FRAMEWORK
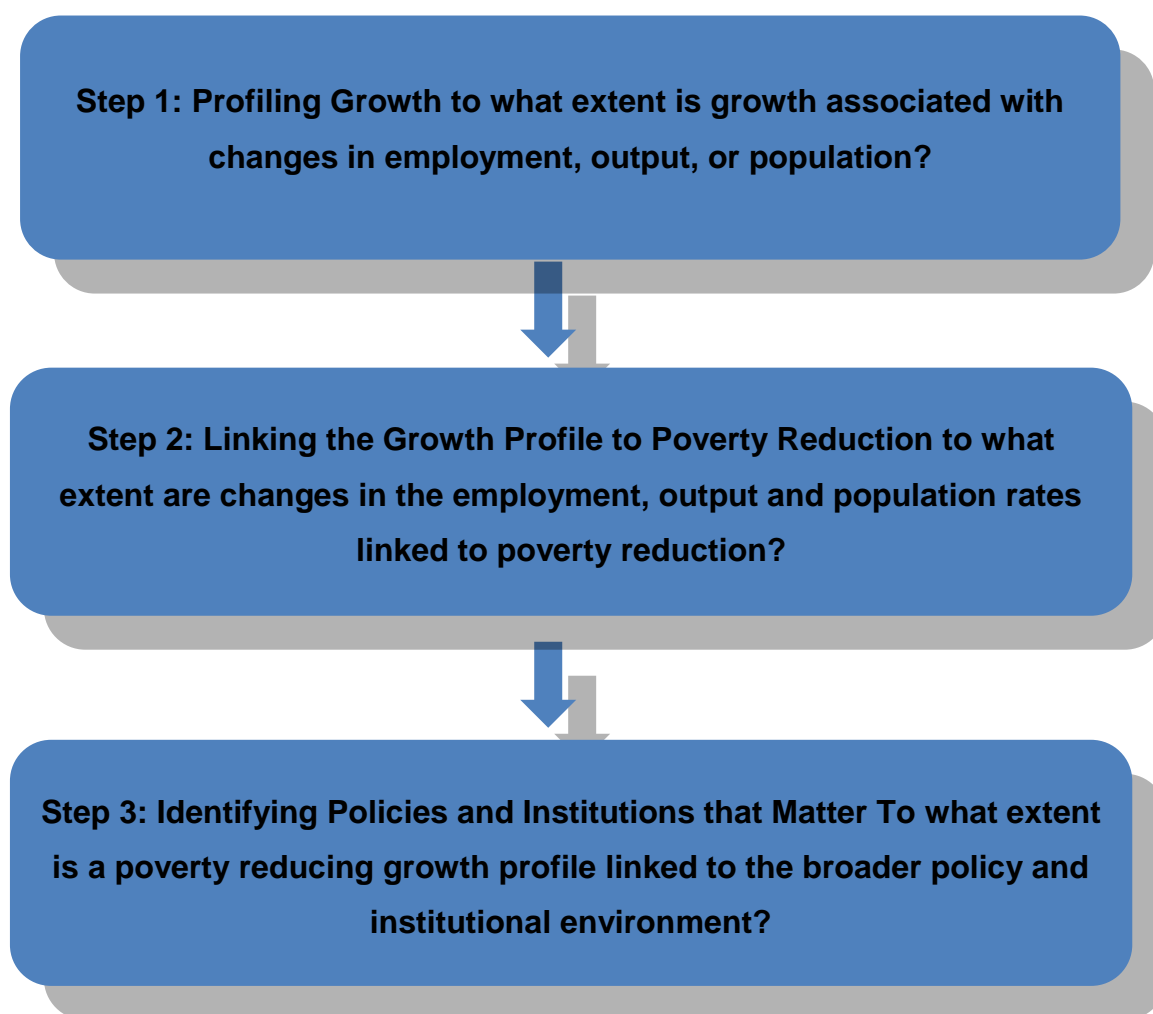
Source: Hull, 2009:74

The framework provides three stages of analysis. First, it decomposes economic growth into changes in both the quantity and quality of jobs. Second, it ascertains whether improvements in employment or productivity are associated with poverty reduction, and whether this pattern changes by sector. Third, it highlights the broader policy and institutional environment which is associated with a poverty reducing pattern of growth (Hull, 2009:75).

Hull proposed three steps in the employment poverty reduction profile. First step is profiling growth. Hull (2009:75) states that firstly, one has to understanding how growth in the sectors is linked to poverty reduction. This can be through the effect of

sectoral growth on the quality or quantity of jobs. Hull argues that most of the relationships between growth and employment has traditionally focused on the employment response to growth. This basically is where employment is set as a dependent variable in a regression where growth is independent variable explaining the changes in employment. The coefficient found, is thus presented in percentage terms as the percentage change in employment in response to 1 percentage change in output. This measure or approach fails to say anything about the actual extent of job creation since a country that grew by one percent and enjoyed a one percent increase in employment would have the same employment elasticity rate as a country which had a 10 percent growth rate accompanied by a 10 percent increase in employment (Hull, 2009:75). The other weakness of the measure is that it does not take demographic changes into account, although growth in population makes the changes made in employment blurred. The other notable shortfall is that, the employment elasticity of growth does not explain anything about the quality of new jobs created. Although it is important to show the correlation and the elasticity of employment it is more important to also expose the impact of population growth and the quality of employment.

It is argued in this framework therefore that a better way to understand how growth is associated with increases in the quantity and quality of jobs is to perform a decomposition of per capita GDP growth into three components: productivity changes, employment rate changes and demographic changes. The level of growth that can be said to have led to changes in output per worker can be obtained by calculating the resulting growth in per capita value added between two points in time under scenario in which employment rates and the share of the working age population remain constant, but output per worker has changed over time. In the same way Hull (2009) argue, the amount of growth attributed to changes in employment or the share of the working age population can be obtained by calculating per capita value added when the other two components are not changing.

In expounding on the second step, Hull (2009) points out that this step identifies the links between the growth profile and poverty reduction, both across the economy and

by sector. This is to a greater extent related to the objective of this study, where employment is looked at as one of the channels for poverty reduction. In Hull's framework, this is done by regressing each of the components of the growth profile identified in step 1 above (productivity changes, employment changes, and demographic change) against percentage changes in poverty. If employment-intensive growth reduces poverty, then changes in the employment rate could be expected to be significantly and negatively correlated with changes in the poverty headcount. If, on the other hand, the income of the poor rises due to increased productivity then, changing productivity will be negatively correlated with changes in the poverty headcount. It can therefore be considered as pro poor growth, if the changes in employment intensive growth are benefiting the poor sectors of the economy as was argued by Islam (2004:1)

The third step involves the process of identifying the underlying conditions which are necessary or which are considered as pre-conditions for poverty reduction. If step 2 discussed above shows trends or reveals that certain sectoral patterns of growth are correlated with poverty-reduction, the policy relevance of this observation will then hinge in part on identifying the broader variables associated with this pattern of growth. These sectors may include areas such as increased employment in the services sector or greater productivity in the agriculture. Step 3 enables analysts to identify whether certain policies or institutional conditions are correlated with particular growth patterns (Hull, 2009:75).

The process of identifying these factors or conditions can be done by regressing on the measure of the sectoral pattern of growth against a number of possible explanatory variables, such as education, labour market regulations, the investment climate, and trade. Explanatory variables should be taken from the beginning rather than the end of the spell since this may make it easier to detect a line of causality running from these variables to poverty reducing patterns of growth. Some of the detailed equations for this analysis are presented in Hull (2009:74). There is evidence from cross-country analysis that confirms that the broader policy and institutional environment will most likely affect the extent to which growth reduces

poverty (Gutierrez *et al.*, 2007). Examples across a sample of countries show that minimum wage legislation appears to significantly reduce employment-intensive growth in the secondary sector, while openness to trade appears to boost it. The most like reason for this negative relationship between set minimum wage and increase in employment intensity is the imposed minimum wage may be higher than the employers would be willing to pay if the so increased the employees. Also, education is robustly and positively associated with productivity-intensive growth in agriculture. These tentative findings demonstrate the scope for future research, since significant heterogeneity in the relationship between the broader institutional and regulatory environment and the sectoral pattern of growth could be expected between regions and countries. Actually other studies have revealed the existence of heterogeneity in the way poverty respond to growth in general, hence broken down to the sources of growth may lead to a more clear picture of the source of the differences, but they mostly likely still exist.

Thus looking at the framework by Hull, it is easy to see the link between employment and poverty reduction. This link is also very clear in other more traditional theories of growth and poverty reduction like Islam (2004). Most countries in their pursuit for poverty reduction look at the rate by which the economy is able to create employment ILO (2008:7). The fact that one is employed presents a direct source of income which regardless of the amount earned is a step out of poverty. People that earn an income are less likely to fall into poverty as opposed to those that have no source of income.

3.1.2 Other methodologies in employment poverty link

In linking employment to poverty reduction Islam (2004:7) employed a methodology that involved a macroeconomic analysis of the linkage between the incidence of poverty and employment intensity of growth, as well as a comparative analysis of household level data from a number of country studies. For the former, employment elasticity in manufacturing was used as an explanatory variable along with GDP growth to explain the variation in annual change in the incidence of poverty where

poverty was measured using a headcount measure. So he used the following function by using cross-country data:

$$ACPI = f\ (GDPG, EETY) \ ... \quad 3.1$$

Where ACPI represents annual change in the incidence of poverty, GDPG represents GDP growth, and EETY represents employment elasticity with respect to output. If the initial level of poverty is included as an explanatory variable, a second formulation would be:

$$ACPI = f\ (GDPG, EETY, IPOV) \ ... \quad 3.2$$

Where; IPOV represents the initial level of poverty. Cross-country data were also used to test the hypothesis concerning the impact of employment and labour market variables on the incidence of poverty. Since employment in non-farm activities is found to influence the income of the poor, employment in agriculture and manufacturing were used as explanatory variables. Likewise, dependency ratio was used as an indicator of the extent of labour force participation. Level of education and skill of the workforce were hypothesised as exerting a positive impact on the income of the poor. However, at the macro level it was not easy to define this variable; and hence a surrogate in the form of adult literacy rate was used as an indicator of the education variable. The following model was arrived at as the estimable:

$$POV = f\ (EAG, EMA, EDU, DEP) \ ... \quad 3.3$$

POV = headcount measure of poverty

EAG = percentage of workforce employed in agriculture

EMA = percentage of workforce employed in manufacturing

EDU = adult literacy rate (in percentage)

DEP = dependency ratio

Islam however pointed out that estimating a model of the kind mentioned above can involve problems, especially if the independent variables are correlated. And that is actually the case here, especially with employment in manufacturing, education, and dependency rate. In such a situation, results obtained from an OLS regression would need careful interpretation. This methodology by Islam (2004) reveals a number of important explanatory variables that can be included in a regression on poverty. In this study, district poverty rates is used as a dependent variable and under the employment channel, employment rate is used as one of the explanatory variables in explaining changes in the poverty rate.

3.1.3 Types of employment and poverty reduction

The ILO is one of the leaders in the promotion of employment as a conduit for poverty reduction. ILO (2008:7) argued for the agenda for decent work. They stated that the Decent Work Agenda provides a framework for shaping policies and actions to reduce poverty by generating more and better jobs. It calls for the integration of economic and social objectives and for a well-orchestrated combination of measures in the areas of employment promotion, rights at work, social protection and social dialogue. It contends therefore that addressing decent work deficits offers pathways out of poverty. They further argued that poverty can be addressed if attention in the creation of employment is given to areas concentrated by the poor masses. It is clearly stipulated in the ILO (2008:1) statement that:

> Promoting decent work in rural areas is fundamental to achieving the MDGs. Three-quarters of the world's poor live in rural areas. Most earn their living from agriculture, and in many cases, the returns they derive from their labour are insufficient to meet their basic needs. While focusing attention on the 1.2 billion people living below the US$1 a day poverty line, that is, those living in what might be termed "extreme poverty", efforts should also extend to improving the livelihoods of that larger group, those living on less than US$2 a day, who make up almost half of the world's population.

The type of work created or that the poor are involved in is therefore central in making sure that there is an impact on the poverty status of the employee. The type and quality of employment is determined by a number of things. These determinants may include the sector where the job is, and the skills levels requirement of the employee. Most non skill jobs are associated with less pay and are in the primary sector of the economy like agriculture. However, in order to include the poor as part of the new workforce that benefits from jobs created in the efforts of reducing poverty, there is need to concentrate on the sectors that the poor are mostly involved in (Islam 2004:7).

A study in Malawi on employment and poverty reduction by Chirwa (2009) allude to the importance of employment in the poverty reduction effort. He points out that in relation to the efforts to reduce poverty by creating employment, the government of Malawi has directly embarked on programmes that link the creation of income opportunities to efforts in poverty reduction (Chirwa, 2009:15). Furthermore, Chirwa points out that the government of Malawi has taken several initiatives to improve access to income opportunities for generation of employment in the micro, small and medium enterprises. The importance of employment in the reduction of poverty is very clear in the literature. This study as pointed out in the introduction attempts to quantify the employment poverty reduction relationship using district level data.

3.2   EDUCATION AND POVERTY REDUCTION TRAJECTORY

The Human capital theory and to a certain extent the correspondence theory provide a basis for the link between education and poverty reduction. The human capital theory connection to poverty reduction implies that an effective anti-poverty strategy should incorporate the enhancement of education and skills. The fact that education embodies knowledge and skills in people that enables them to function with greater dexterity is the distinguishing importance of education to poverty reduction (Blaug, 1970:1).

In his study on education, employment and poverty, Rahman (2006:3) contended that the contribution of education to the social and economic development of

societies has been established beyond doubt. He pointed out that the search for strategies of poverty reduction has among other things identified education and literacy as important instruments for improving the conditions of the poor (Rahman, 2006:3). The United Nations Development Program (UNDP, 2005) and the World Bank (2005) also agree on the importance of education in poverty alleviation. They argue that education helps poverty alleviation through its impact on productivity of labour and through other channels of social benefit and therefore education is an important development goal of nations (UNDP & Government of Botswana, 2005:1; WB, 2005:1). The benefits of education that can be linked to poverty reduction are so many. Beside the impact on earnings, education reduces fertility in women and increases knowledge of basic surviving techniques in people. Rahman (2006:3) maintained that education can have an impact on poverty if children from poor households have access to education and if the educated youth have access to employment. This shows the link that education and employment share in poverty alleviation.

Becker (1964) and Blaug (1970) stated that education embodies skill and attitudes in human beings that make them to become more productive at the work place. Although emphasis in the human capital theory has been laid on the formal sector of employment, the informal sector of self-employment and agriculture has also positive correlations with education. In the IHS 3 where the data for this study heavily relies on, it is stated that education is a building block for human, political and socioeconomic development, particularly important for poverty reductions because it empowers the poor, the weak and the voiceless by providing them with better opportunities to participate in national development (NSO, 2012:21). The argument that education empowers the poor assumes that the poor have access to education. There are studies that show that children from poor households are less likely to stay in school, and where they stay in school, their achievement is lower than their counterparts from high income families (Conley, 2001:59; Pfeffer 2011:109)

According to Stevens and Weale (2004:164) there are two very basic reasons for expecting to find some link between education and economic growth, which can

further be linked to poverty reduction. The first one which is to a greater extent on a general level is the fact that it is intuitively plausible that living standards have risen so much over the last millennium and in particular since 1800 because of education (Stevens & Weale, 2004:164). The two further argue that progress of this magnitude enjoyed in Europe was not observed in the illiterate societies that have gradually merged into the world economy over the last two hundred years. The second reason which according to Stevens and Weale (2004:164) is at a more specific level, is that a wide range of econometric studies indicates that the incomes individuals can command depend on their level of education. They argue that if people with education earn more than those without education, it should logically follow that countries with higher education levels should have more income than those with lower levels of education. On district level therefore, it can be extended that districts with higher education levels should be expected to have lower poverty rates than those with lower education levels.

The connection of education to income was first proposed by a study conducted by Mincer (1974). He looked at individual earnings as a function of years of education and also other factors such as age and experience. He found that, for white males not working on farms, an extra year of education raised the earnings of an individual by about 7 percent. In his findings however, earnings appeared to be an increasing linear and decreasing quadratic function of years of work. When allowance was made for this, the return to a year of schooling increased from 7 to 10.1 percent. The introduction of a quadratic effect in schooling and a cross-product term between education and experience suggested a more complicated pattern of returns but pointed to the early stages of education being more valuable than the later stages according to Stevens and Weale (2004:164). Hence through the mincerian function years of schooling have been found to be a significant factor in explaining the different levels of earnings people with different education levels have.

Siphambe (2001:291) also used the mincerian function to look at the impact of education on earnings in Botswana. He found that education contributed to higher earnings with those with tertiary education having the highest earnings differential.

The link between education and poverty reduction is one of the most interesting as it may indicate the importance of education which is mostly patronised by those coming from higher income families to a greater extent (Morgan *et al.*, 2006:165). According to Dunga (2012:54) education can also be blamed for the increasing inequality in societies where only those children coming from higher income families are able to afford a decent education and those from poor households attend government schools that are poorly resourced.

The relationship between poverty and education is particularly important because of the key role played by education in raising economic growth and reducing poverty. The better educated have higher incomes and thus are less likely to be poor (WB, 2005:11).

The debate that is in the literature about the role of education in development and economic growth has focused upon whether education is productive in an economic sense as argued by Oxaal (1997:1). There is much evidence that contend that levels of schooling amongst the population are highly correlated with levels of economic development. But whether education levels has helped cause the higher levels of development, or whether causality runs from income growth to educational expansion, remains open to debate. Human Capital Theory (associated with the work of Gary Becker, Mark Blaug and many others), asserts that education creates skills which facilitate higher levels of productivity amongst those who possess them in comparison with those who do not. Education, then, although costly brings associated benefits which can be compared with its costs in the same way as happens with any investment project according to Blaug (1970:65) Schultz (1960:2) and Johnes (1993:12).

One of the important things that can be looked at, when considering the relationship between education and poverty, hence income, is that there is a strong, and empirically verifiable, positive relationship across all societies between the wages and salaries people receives at work and the level of education which they have received (Johnes, 1993:12; Siphambe, 2000: 291). This may not reflect productivity but it is assumed that those with higher education bring with them specialised skills

hence deserve a higher pay. Education is actually used as a screening process in deciding who to employ by most companies according to Taubman and Wales (1975:69). It can be argued however that education is used as a screening devise with the assumption that the ones chose, being the educated ones are more productive than the ones with less education, it follows that those with higher levels of education levels seem portray to have on average, higher levels of productivity. The other indication that can be pointed out to show the importance of education in the determining of different income levels people have is that, the earnings if considered by age of the more educated not only start at a higher level of the earnings profile, but they tend to increase faster to a peak as they progress in their career or job. This observation is not the same with the earnings profiles of the less educated whose earnings profiles remain to a greater extent flat throughout their careers (Blaug, 1979; Johnes, 1993; Oxaal, 1997).

There are however other characteristics of education that needs to be noted, which to a greater extent are similar to what happens to physical capital. The fact that the profiles peak and then decline beyond a certain age, suggests that the skills created by education are prone to obsolescence. Thus beyond a certain point the skills become irrelevant. This means that their productive value declines as technology changes beyond the embedded knowledge (Polachek, 2007:1). An extremely important context, however, for a discussion of poverty is that part of production which takes place outside the formal sector, much of which is characterised by self-employment in rural has a different form of education and skills which is not recognised by the formal education accounting. There has therefore been much interest in examining as to what extent education plays a role in the production patterns of the activities in the informal sector.

It has been shown that primary schooling, which allows people to acquire the basic skills of reading and writing, helps to increase the productivity of subsistence and low income rural area farmers, particularly when they have access to the inputs needed to enhance their production (Johnes, 1993; Psacharopoulos, 1994). It has been shown also that the earnings of the self-employed, including those in urban and

informal sector activities, are to some extent higher for the educated than for the uneducated. Similar results have also been found in other studies which have demonstrated that increasing the schooling of women brings benefits to their own control of health choices including reduced fertility. The benefits of women education is also seen in their families according to Oxaal (1997). The need to find to what extent education has influenced the movements of the poverty rate at district level in Malawi therefore is based on this premise, with a prior expectation that the districts with higher education level will have a resultant lower poverty rate.

The most referred to link between education and poverty reduction is through the earnings that educated people have (Siphambe, 2001). Any analysis of the determination of economic growth has to have some connection with the microeconomic underpinning. Because education delivers economic benefits to individuals, one should expect to see effects of education on groupings of individuals.

According to Polachek (2007:15), Mincer (1958, 1974) was the first to derive an empirical formulation of earnings over the lifecycle. In his formulation, at any point (t) in an individual's lifetime, observed earnings can be depicted as a concave function of one's labour market experience. So if an assumption is made about the time of schooling to be (S) years; also, assuming that on the job training declines linearly over the lifecycle, then the log-earnings are a quadratic function of labour market experience. The Mincerian function follows the formulation as follows:

$$ln\, Y_i\, (t) = a_0 + a_1\, S_i + a_2\, t_i + a_3\, t^2 + \varepsilon_i \quad \dots \quad (3.4)$$

Where Y (t) = wK (t) − s (t) K (t). Here a0 is related to initial earnings capacity, a_1 is the rate of return to education (assuming all schooling costs are opportunity costs), and a_2 and a_3 are related to both the amount and the financial return to on-the-job training (Polachek, 2007:15) There have been a number of studies comparing output per worker in a number of different countries, based on variants of this approach. One of the best known was by Mankiw *et al.* (1992).

3.3   ACCESS TO CREDIT, TRADE AND POVERTY REDUCTION

Strategies to reduce poverty in the developing countries where incidences of poverty are high come from many angles. Access to credit is one of the important channels that developing countries can employ in the effort to reduce poverty. The fact that unemployment is very high in most of these developing countries call for other strategies that do not rely on getting employed only (Zindiye & Mwangolela, 2007:10). One area that has a lot of potential is the small and medium enterprises. Studies by Diagne and Zeller (2001) and Shastri (2009) have shown that the countries that have expanded the accessibility of credit and loans to vulnerable households have also registered positive results in poverty reduction. Most households in developing countries like Malawi are agricultural based with limited opportunities of formal employment. This makes it difficult for households to access loans and credits from the formal financial sector due to their lack of collateral. With all the efforts that have been put over the years to reduce poverty, there still remain a lot of people that are stuck in poverty. As part of the poverty alleviation strategy, governments in other developing countries like India (Shastri, 2009:2) Malawi (Diagne & Zeller, 2001:1) Ethiopia (Pitamber, 2003:2) have put in place measures that help poor households to access loans mainly for small enterprises and agricultural inputs. Shastri (2009) in his reference to India argued that the dynamic growth of the microfinance industry has been promoted not only by market forces but to a greater extent also by conscious actions of national governments, Non-Governmental Organisations (NGOs), and the donors who consider microfinance and access to credit by poor households as an effective tool for dealing with poverty. The relationship between access to credit and poverty reduction is therefore a well-documented one in the literature. Other studies that have shown a positive impact of access to credit on poverty reduction include (Bhandari, 2009:1; Quach, *et al.,* 2005:1; World Bank, 2007:1; Pitamber, 2003:2) among others.

World Bank among the other international organisation Like IMF and UNDP has been in the forefront promoting access to loans and credits. In the World Bank report of 2007, it is argued that financial sector development is consistent with pro poor

growth (World Bank, 2007:99). This suggests that, the more developed the financial sector becomes, the more will the opportunities for loans a credit be. A study by Shastri (2009:1) in India looked at the dynamic growth of the micro finance industry and how in recent years there has been a lot of support towards the increasing of loan and credit accessibility of poor households. Also in India, Bhandari (2009:2) found that the reduction in poverty is not necessarily associated with the formal banking sector. Using the number of account created in the formal sector as a measure of access to loans he found that there was no significant relationship with poverty reduction in India. This could be explained by the fact that, formal banking sectors require security in giving out loans, which poor people do not have. A study in Vietnam by Quach *et al.* (2005:1) found that household credit contributed positively to economic welfare of the households. The significant contribution was found on per capita expenditure, per capita food and non-food expenditure. They further argued that the positive impact found in Vietnam was on both poor and non-poor household, (Quach *et al.*, 2005:1).

Development as is perceived includes a significant change on the social economic wellbeing of the citizens in the country concerned. Hence if trade affects development then it should have a direct bearing on the social economic aspects of society. This is the logic through which trade is considered and hence analysed in this study as a channel through which poverty if reduced. The importance of trade in the development of a country is evident in a number of researches conducted all over the world. The emerging agreement in the theoretical literature as well as from empirical studies is that trade promotes economic growth and reduces poverty, because it behaves as a channel through which surplus national production can exchange the products of other countries.

One of the driving forces behind the impact of trade is the fact that it encourages the allocation of resources based on the perceived comparative advantages of participating sides or countries and in the process drives economic growth. Participating countries derive significant welfare gains from trading. However, although trade between countries may generate growth globally, there is nothing to

prove that its aggregate benefits in the countries benefiting are distributed equitably among trading partners (UNECA, 2013:1).

Many factors determine the extent to which a country may benefit from a trading relationship. These include the terms of trade a country faces in comparison to its trading partners, the international exchange rate among the traded goods and the market characteristics of the country's exportable goods. Winters (2002:1) has demonstrated that trade can affect poverty through different channels which include; economic growth, price changes, market and government revenue. The fact that poverty remains Africa's greatest challenge, analysing the link between trade and poverty is crucial, and reducing its effects is a priority. With the knowledge and continuous evidence on the potential gains associated with trade, many countries across the globe are pursuing trade liberalisation policies to achieve prosperity and growth and eventually alleviate poverty. The World Trade Organisation (WTO) leads in the effort of making trade between countries to be more open. The literature indicates that a close relationship exists between aggregate economic growth and poverty reduction. Baldwin (2003:2) points out the fact that countries that have reduced restrictions on trade have shown significant economic growth. This correlation, although not claiming causality, cannot be dismissed. These simple correlations show the relevant role that pro-growth trade policies play in efforts to deal with poverty through growth.

A study by the OECD (2012) on trade growth and employment shows how trade movements improve the chances of economic growth and employment. The study using a number of OECD countries shows that an increase in trade is associated with an increase in economic growth and also employment rates. The figure below shows a trend in Imports and GDP with its association to unemployment. It is showing that increase in trade has an associated reduction in unemployment.

FIGURE 3.2: RELATIONSHIP BETWEEN TRADE AND UNEMPLOYMENT

Source: OECD Economic Outlook database.
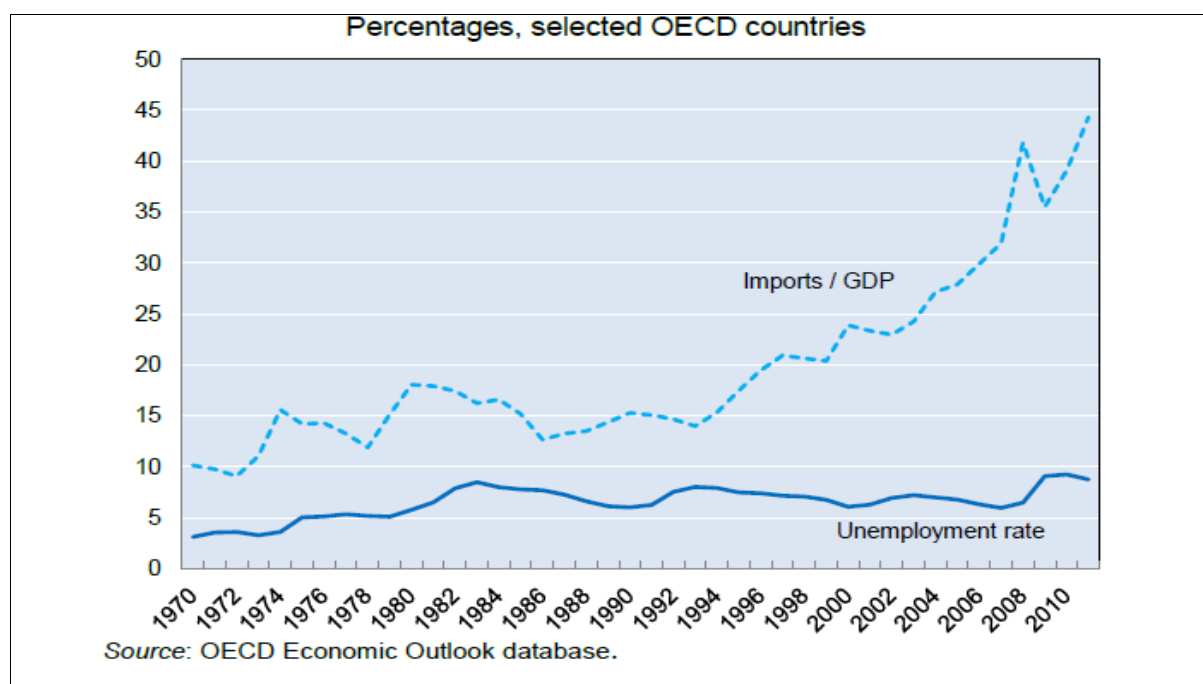
Source: OECD website: 2013

It is argued by Assessing Regional Integration in Africa (ARIA) that poverty is reduced at a faster rate if there is faster growth in a country. It therefore sounds sensible to use trade as a tool for poverty reduction. This connection is justifies by looking at trade liberalisation in a way that it reduces relative price distortions due to the existence of competition. This therefore allows those activities with a comparative advantage to grow and as a result encourage economic growth (ARIA, un).

Due to the limited availability of capital intensive investments among poor countries, they tend to engage in labour-intensive production activities due to an overabundance of cheap labour. ARIA (un) points out that a removal of trade barriers in these countries promotes intensive economic activity and in the process creating employment and income to many poor people. However, trade restrictions distort relative prices in favour of capital-intensive activities and it works to the disadvantage of poor countries. This position is however true in the cases where opening up trade does not suffocate local producers with foreign cheap products.

McCulloch and McKay (2004:1) have shown that the alleviation of poverty is attained through long-term economic growth. They argue that faster economic growth raises income levels, which in turn allows governments more tax revenue to take redistributive measures. This is the same result Dollar and Kraay (2000) found in the relationship between growth and poverty. The link between trade and growth may occur through increased productivity. Contacts with the world market enhance total factor productivity in an agricultural production. The agriculture is sector one in which technical change has been extremely Important as a way of improving production efficiency. This was demonstrated by the Green Revolution in Asia in its improved practices and new seed varieties and, in Brazil, by the spread of genetically modified crops. These advances might not have occurred if these countries had had no contact with global markets.

According to Krugman, (2003:1), past trends in a number of countries demonstrates that poor countries that worked to improve their standard of living achieved it through globalisation as they produced for the world market rather than choosing to be self-sufficient. This in other words is a movement from a subsistence stage of economic development to the take off stage where trade becomes an important aspect. Grossman and Helpman (1994:1) demonstrated in their work that integration with the world economy can boost a country's productivity. Herein productivity is directly linked to the labour section of the economy which in turn links directly to the lower income people to a greater extent. Krugman (2003:1) pointed out three ways of the international integration- productivity link. First, he says that residents of a country that is participating in international trade and hence integrated into world markets are likely to have access to a larger technical knowledge base than those living in relative isolation, because trade helps improvement in technology.

The second point according to Krugman (2003:2) is that, exposure to international competition may eliminate redundant research. A firm that is participating in international trade, need to develop ideas that are new and innovative enough in order to stand out at the international or global scale. Third, by expanding the size of the potential customer base, international integration may encourage industrial

research in the areas of comparative advantage. Transmission mechanisms from more open trade to the dynamic gain of factor productivity growth should not apply any less to developing countries than to industrial countries. Certainly, for the two countries with the largest poverty-stricken populations in the world, China and India, the experience of the past two decades has been resoundingly consistent with the diagnosis that opening trade to the world economy fosters productivity and economic growth (Grossman & Helpman, 1994:1).

3.4 FOREIGN DIRECT INVESTMENT (FDI) AND POVERTY REDUCTION

Foreign direct investment (FDI) is the money flowing in an economy from outside the country. This is not money coming from citizens based abroad, by from foreign nationals or foreign corporations. The increase in FDI in recent years is due to the opening up of trade and investment around the globe. The globe market is now open to the flow of both financial and physical capital; investors all around the world are looking for better places to put their money. Asia for example has been the destination of so much FDI in the past few decades and this has resulted in massive investments in manufacturing and other sectors leading to the economies leading in this initiative to benefit substantially. Hossein and Weiss (2002) looked at the relationship between FDI and poverty through growth, which is basically one of the areas this study is focusing on. In their study, Hossein and Weiss (2002:250) pointed out how the ASEAN region has benefited from FDI. They pointed out that there is a large theoretical and empirical literature that suggests FDI has implications for the rate of growth of the host country. There is equally a large body of literature that suggests the rate of growth in an economy affects the poverty index; most argue that the relationship between the two is positive. By implication therefore, through its impacts on growth, FDI is likely to have an impact on the level of poverty in whatever country the FDI is taking place. Besides its indirect "trickle down" effect through higher economic activity or higher earnings on the return from the investment, FDI also has a direct impact on poverty through employment generation as well as human capital upgrading through training provision that multinational firms may also provide. The sophistication that comes with multinational corporations requires i

higher dexterity and hence leads most of the time to training programs for existing and new employees. The interactions between FDI, growth, and poverty reduction however are likely to be complex. Explanation for these not only relates to the controversies that surrounds the interaction between FDI and growth, but also relates to the relationship between growth and poverty. The theoretical and empirical literature on FDI and its impact are at times contradictory and location specific (Hossein & Weiss, 2002:234). Different growth scenarios are also likely to have different implications as far as their impact on poverty is concerned. Therefore, the interaction between FDI, growth, and poverty is likely to be location and period-specific, given that the impact of FDI on growth on one hand and that of growth and poverty is likely to be different for different location and at different points in time. This raises the possibility that in ASEAN, where FDI has played a particularly significant role in growth, its poverty consequences may differ from those of other countries or regions elsewhere (Hossein & Weiss, 2002:231).

The theoretical literature indicates that the share of gross domestic product (GDP) devoted to total fixed investment spending plays a crucial positive role in economic growth. This proposition seems to have been supported overwhelmingly at the empirical level. However, the suggestion that the aggregate fixed investment ratio promotes growth does not suggest that all types of investment have the same effect on growth. This has recently led to a number of empirical studies directed at identifying the effects of different categories of fixed investment on economic growth; most of these are extensions of Solow (1956:1). De Long and Summers (1991, 1992:1) and De Long (1992:1) have included two categories of investment? machinery equipment and non-machinery component of private fixed investment? In an economic growth equation. A rather more direct empirical application of Solow's model has been adopted by Mankiw *et al.* (1992:1) with other contributions including those of Knight *et al.* (1993:1), Islam (1995:1), and Pugno (1996:1). Nonneman and Nonneman and Vanhoudt (1996:1) have generalised this approach to include various categories of investment and applied this generalised framework to an evaluation of the effects of three investment categories? Physical capital, human capital, and technological know-how? On economic growth. The extended

Nonneman and Vanhoudfs model in order to investigate the possible differential impact that domestic and foreign investment may have on growth would look in the way the model below is presented. This basic growth accounting equation set out below was adopted by Hossein & Weiss (2002:237):

$$G_{DGP} = \beta_1 g_d + \beta_2 g_f + \beta_3 g_h + \sum_{i=1} \gamma_i x_i \text{ .... (3.5)}$$

Where g stands for growth and the subscripts GDP, d, f, and h stand for gross domestic product, domestic investment, foreign investment, and human capital, respectively, d, f, and h are specified as ratios of capital inputs to GDP. Adding an intercept and a stochastic error term allows the possibility of running a regression estimating various GDP growth elasticities with respect to various forms of capital. Parameter estimates from regressions using equation above as the base show direct measures of the marginal propensity of GDP to grow with respect to the growth in the share of GDP of various types of investment. Foreign investment was expected to have different attributes in contrast to domestic investment. In the context of developing countries like Malawi in particular, most theoretical discussion suggests positive growth enhancing effects, in relation particularly to the transfer of technology and management which has been the focus of many growth efforts proposed by international organisation like the World Bank and IMF. Positive externalities for domestic producers are also expected and seen for example Klein, Aaron, and Hadjmichael (2001). One thing that was noted by Hossein *et al.* (2002) was that the incorporation of FDI as a separate regressors in a growth accounting exercise is acknowledged to present problems in the presence of externalities. Where these are positive, the most notable distortion is that it can inflate the output elasticity with respect to capital in conventional growth accounting analyses, for example as FDI adds to public knowledge as well as physical capital stock De Mello (1997:13) demonstrated clearly how this can be formally can be expressed in an augmented Cobb-Douglas production function incorporating knowledge, (Hossein & Weiss, 2002). This in a special way shows how all the trajectories considered in this study are related, where investment in human capital which emanates from education is

clearly an investment that has a similar consideration like investment in physical capita resulting from FDI.

3.5 AGRICULTURAL PRODUCTION, LAND HOLDING AND POVERTY REDUCTION

Development theories make cognizance of the different stages a country goes through to attain a level of a higher standard of living for the citizens. Rostow's (1960) growth theory suggests a five staged trajectory from underdevelopment to development. The first and starting point is the traditional society which is a precondition to take off into a self- sustaining growth (Todaro & Smith, 2011:111). The traditional societies are characterised with agro based economies, of which most developing countries fall under. Malawi's economy is still agro-based, in 2012 according to NSO (2012:130) about 85 percent of households in Malawi were engaged in agricultural activities. Of these households, about 84 percent of households were engaged in crop production whilst 44 percent reared livestock. The survey also revealed that 43 percent of households engaged in agricultural activities were engaged in both livestock raring and also crop cultivation. Thus a bulk of Malawi economic activity is based on agriculture. This is not unique to Malawi, ILO (2008:4) pointed out that historically agriculture has been and continues to be an engine of economic development, providing the food, feed, fibre and fuel with which to create more diversified products and services in other sectors. In many countries, agriculture continues to be the mainstay of rural livelihoods, a major contributor to GDP and an important source of export earnings (ILO,2008:4). This entails that a poverty reduction that has to be effective in the country has to factor in agriculture as a channel for its success. A number of studies have shown the existence of a direct link between agricultural production and poverty reduction. Coxhead and Warr, (1995 cited in Hull 2009:70) found that increase in agricultural productivity reduces poverty especially for the rural masses. DFID (2005:1) noted that agriculture should be placed at the heart of efforts to reduce poverty. They pointed out that there is a mass of evidence that increasing agricultural productivity has benefited millions through higher incomes, more plentiful and cheaper food and by generating patterns

of development that are employment intensive and benefit both rural and urban areas.

According to NEPAD (un), improvement in agricultural performance has potential to increase rural incomes and purchasing power for large numbers of people. This mean that more than any other sector agriculture can uplift people on a mass scale especially in developing countries like Malawi where the majority of people are in agriculture. NEPAD states that with improvement in agriculture, a virtuous cycle can be started of reduced hunger, increased productivity, increased incomes and sustainable poverty reduction (NEPAD cited in ILO 2008:6). The World Bank (2003:15) also concurred and argued that rural poverty is as diverse as are the rural poor in their livelihood strategies, but in most of the poorest developing countries, agriculture is the main source of rural economic growth. That is why improved agricultural productivity and growth are central to the Bank's strategy. The US through its AID organisation also looks at agricultural production as central. They contended that for many developing countries, overall economic growth, trade expansion and increased income-earning opportunities depend on the performance of the agricultural sector. Therefore, in these developing countries, increases in agricultural productivity must be accelerated to bring down current levels of food insecurity and meet the food, job creation and income needs of new populations and hence reduce the incidences of poverty (USAID, 2004:7). In their argument for agriculture the CGIAR (2005:1) stated that agricultural growth is critical to achieving the MDGs. As the vast majority of potential beneficiaries of the MDGs depend on agriculture for a living, higher agricultural productivity is a precondition for achieving the goal of eradicating extreme poverty and hunger in the poor countries. It is therefore through agricultural production that smallholder farmers have a chance of rising out of poverty. This is sorely dependent directly on their ability to increase the productivity of their crop and livestock husbandry activities. Agricultural production growth in developing countries has strong direct and indirect effects on non - agricultural growth. Perhaps more importantly the positive impact of agricultural growth on poverty reduction is more than proportional to the relative importance of the sector in the economy according to FAO (2005:1)

The understanding of the importance of agriculture as a channel for poverty reduction requires accompanying policies to enhance its effect. As stated by the International Labour Organisation in its 98th session:

> Agriculture cannot play this dynamic, wealth-creating role without an enabling policy environment, adequate institutions, and sufficient, well-targeted public and private investment. The experience of recent decades has been disappointing in this regard in a number of countries, particularly the LDCs, where investment has declined, rural poverty remains widespread and a very large share of the labour force is engaged in low-return agricultural work. Cuts in health and education budgets and in other public services, as well as the dismantling of publicly funded agricultural extension services during the structural adjustment processes of the 1980s and 1990s, undermined the foundation for bottom-up development for a generation. The effects are being felt today with a large number of poorly educated rural youth with few skills and poor job prospects and a smallholder agricultural sector that cannot thrive due to lack of support in terms of policy, infrastructure, inputs and investment (ILO, 2008:5)

The relationship between poverty and agricultural production in Malawi has been also reported in studies by Chirwa, (2004) and (2008) where he linked agricultural production to land holding and poverty. The findings according to Chirwa, (2004) were that access to land was one of the major hindrances to household production and hence poverty alleviation. Chirwa argued that agricultural policies in Malawi favoured large-scale (estate) production at the expense of smallholder farmers who accounted for more than 80 percent of households. Smallholder farmers faced several constraints including landlessness and small land holdings and declining agricultural productivity (Chirwa, 2003:1).

3.6   CONCLUSION

This chapter presented a review of the theoretical and imperial literature on channels of poverty reduction. The channels of poverty reduction that have been discussed

include employment, education level, and access to credit, trade, FDI and agricultural production. Under employment the chapter has discussed how employment created in the areas that are mostly participated by the poor translates to reduction in poverty. A further discussion on a framework that shows the quality and quantity of employment needed which was proposed by Hull (2009) has also been discussed. The chapter has also discussed that, the type of work created or that the poor are involved in is therefore central in making sure that there is an impact on the poverty status of the employee. The type and quality of employment is determined by a number of things. These determinants may include the sector where the job is, and the skills levels requirement of the employee.

On education, the chapter has linked education levels to the probability of getting a job. The fact that education embodies knowledge and skills in people that enables them to function with greater dexterity is the distinguishing importance of education to poverty reduction. The most referred to link between education and poverty reduction is through the earnings that educated people have. And the chapter has shown the fact that educated people have a higher chance of earning an income that reduces their probability of being poor. The mincerian function by Jacob Mincer has been identified as the pioneering work in the linking of education level to earnings. The connection has been made therefore that based on the fact that higher levels of education are associated with higher levels of income and hence lower probabilities of falling into poverty, the expectation of the study is that districts with higher average percentages of education will have lower poverty rates. Or that increases in education levels observed over time should be associated with reduction in poverty rates.

On the importance of trade, it has been shown in the chapter that many factors determine the extent to which a country may benefit from a trading relationship. These include the terms of trade a country faces in comparison to its trading partners, the international exchange rate among the traded goods and the market characteristics of the country's exportable goods

Enterprise of the households and access to capital for people of different income brackets (Shastri, 2009:2), agricultural productivity especially for developing countries, (Chirwa, 2004:1) among other things have also been discussed in detail, showing the link between each of these channels to poverty reduction.

CHAPTER 4:   MALAWI PROFILE IN THE SOUTHERN AFRICA CONTEXT

4.1   INTRODUCTION

Malawi is a country located in Southern Africa, with a geographical area of 118,484km^2 (GoM, 2013:1) The country is a member of Southern Africa development Community (SADC), Common Market for Eastern and Southern Africa (COMESA) among other groupings (GoM, 2013:1). Studying Malawi' poverty reduction effort is in a way trying to understand a component of the bigger picture of Africa.   This chapter has three main sections; the first section presents basic details and profiles of some of the countries in Southern Africa, specifically those in the SADC region to put the study on Malawi in context. The profiles for the other countries are however very brief so that the study does not lose focus on Malawi. The second section of the chapter presents a detailed profile of Malawi as a case study country and reviews the idiosyncrasies of the districts in Malawi which are used as units of measurements in the poverty analysis. As laid out in chapter one, the study looks at the channels of poverty reduction in Malawi. The channels to be considered include, but not limited to, education levels, employment levels, Gross Domestic Product (GDP); which will be measured in terms of agricultural production at district level. Also to be considered are macro-economic factors like Inflation and exchange rate, these are expected to have a significant impact on movement of poverty across the country hence expected to have an impact to the district head count poverty rate. The third section of this chapter will therefore present a detailed picture of these aspects both on national level and district level.

The presentation of this chapter will follow a thematic fashion where literature and data available in each theme will be presented around a particular theme. Most of the figures on Malawi are based on the most recent national wide survey known as the Integrated Household Survey three (IHS 3). This study has been privileged to be conducted immediately after the data and report on the IHS 3 just came out in September of 2012. IHS is conducted by the National Statistical office of Malawi.

This is the expert group on data collection in the country and their coverage is the largest in the country. Other sources of data are the National statistics year book, which are produced annually and are a detailed presentation of a wide range of variable, including employment/unemployment, education participation at district level, GDP and agriculture production both at national and district level among other variables. All these data are made available on line by NSO at http://www.nsomalawi.mw/. There are references to other data sources too; studies carried out by the World Bank and other international institutions also provide important information on Malawi. The brief profiles for the other SADC countries are mostly from the SADC publications.

The study as pointed out in chapter one, is highly motivated by the importance poverty reduction efforts have amassed over the years (ILO, 2008:7; WB, 2010:1). Like in many other developing countries, poverty has become the central problem confronting Malawi in the new millennium. Not that the country was not poor already, but the realisation of the deprivation in itself leads to other ills has received unprecedented attention in the last two decades, (Chirwa, 2004:1; 2008:2; Krishnakumar & Ugarte, 2011:1; Mukherjee & Benson, 2003:339). The importance of dealing with poverty can be seen in the emphasis by most donor partners across the world to include aspects that show direct impact on the lives of the ordinary citizens (ILO, 2008:7; WB, 2005:1; UNDP, 2005:1). This realisation of the importance of dealing with poverty is the reason the first Millennium Development Goal of eradicating extreme poverty and hunger included a requirement to member countries of the United Nations to reduce the incidence of extreme poverty by half by 2015 (ILO, 2008:4). In the case of MDGs, extreme poverty is measured as per capita expenditure or income of less than $1 per day. Although the measure of poverty has changed in its emphasis over the years, the goal remains the same, that the head count should be reduced by half by 2015. The 2015 target is within reach now in 2013 and it appears that most countries have made great strides in reducing extreme poverty. Malawi still has high incidences of extreme poverty especially in the southern region (NSO, 2012:205). This chapter is therefore comprised of a detailed

profiling of the country and the districts to set a foundation for the analysis in chapter six. Table 4.1 presents world poverty scenario as reported by World Hunger (2013)

TABLE 4.1 WORLD POVERTY FIGURES

Region	% in $1.25 a day poverty	Population (millions)	Pop. in $1 a day poverty (millions)
East Asia and Pacific	16.8	1,884	316
Latin America and the Caribbean	8.2	550	45
South Asia	40.4	1,476	596
Sub-Saharan Africa	50.9	763	388
Total Developing countries	28,8	4673	**1345**
Europe and Central Asia	0.04	473	17
Middle East and North Africa	0.04	305	11
Total		5451	1372

Source: World Hunger, (2013:1)

The world scenario shows that sub-Saharan Africa has the highest rate of the less than $1.25 per day. Malawi being part of the sub-Saharan Africa, it makes sense to profile the country in comparison to the sub-Saharan region. The next section is therefore a profile of Malawi in the context of the sub-Saharan Africa.

4.2   PROFILING MALAWI IN THE SUB-SAHARAN AFRICA CONTEXT

In poverty terms and development terms, Africa remains the most under-developed and most affected by poverty (WorldBank, 2013:1). Although there are still very high numbers of poverty in other parts of the world like Asia and South America as pointed out by Agrawal (2008: 91), and World Hunger (2013:1), there is enough evidence that the incidences of poverty have been decreasing at a higher rate in

those other parts of the globe than in Africa, sub Saharan Africa in particular (Agrawal, 2008:90; Klasen & Misselhorn, 2008:5; World Hunger 2013:1). One characteristic that is common in the Sub-Saharan Africa countries is that they are still reliant on agriculture. Besides South Africa, the rest of the other countries in sub - Saharan Africa are still heavily reliant to great extent on subsistence agriculture; and are still haunted by preventable diseases like Malaria and HIV and AIDS according to Mukherjee and Benson, (2003:409; World Hunger 2013:1). Although South Africa is reserved as a better economy in sub- Saharan Africa, it is still in the same range when it comes to levels of poverty (STATSSA, 2012:6). In South Africa, the most apparent picture is the inequality that exists between the very rich and the poor masses (Van Der Berg, 2010:3). Figure 4.1 below is the Map of Southern Africa.

FIGURE 4.1 MAP OF SOUTHERN AFRICA

Source: maps-Africa blog spot

Although Africa is regarded as the third world as opposed to the first world which is very developed, Africa still has a lot of potential, with a population less than that of China or India, Africa remains a part of the planet that has huge untapped resources both natural and Human (Savalle & White, 2013:2). The characteristics and potential that Africa has, is causing in a great interest to research on it. This study concentrates on a southern African country of Malawi.

As indicated in the figure 4.1 above, most countries in Southern Africa are land locked, with Mozambique and South Africa covering much of the shore line. The Southern Africa countries are dominated by agricultural based economies with other sectors not well developed (FAO, 2009:2) South Africa is the only economy in Southern Africa that has a well-established industrial and manufacturing sector according to the World Bank (2012:1). The rest of the other countries trade mostly in raw materials, (Afari-Gyan, 2012:63).

Malawi exports agricultural produce like tobacco, tea and Sugar (Chirwa E. W., 2004:1; Mangani, 2011:1). The country has started venturing in mining, between 2008 and 2012 a number of mining companies have started operations in Malawi (GoM, 2013:1). The Tables 4.2 and 4.3 below presents a picture of Malawi in comparison to other SADC countries for the year 1997 and population changes for the years 2006 to 2010.

TABLE 4.2: SADC SOCIAL ECONOMIC OVERVIEW 1997

Country	Population (Million)	GDP	GNP/ Capita	FDI	African Competitiveness Ranking	HDI
Angola	11.9	9886	270	300	23	33.5
Botswana	1.5	4458	3210	75	3	67.3
DR Congo	48	6094	160	2	Na	38.1
Lesotho	2.1	998	660	28	10	45.7
Malawi	10.1	2480	180	1	21	32.0
Mauritius	1.1	3755	3690	37	1	83.1
Mozambique	18.3	2144	90	29	18	28.1
Namibia	2.1	3141	2250	Na	4	57.0
Seychelles	1.5	435	6960	30	Na	84.5
South Africa	45.5	117089	3130	136	7	71.6
Swaziland	1.1	1031	1120	13	8	58.2
Tanzania	31.5	4956	170	150	16	35.7
Zambia	9.5	3564	370	58	12	36.9
Zimbabwe	11.9	7904	610	63	20	51.3

Source: SADC Report: 2011:10

Where FDI is foreign Direct Investment and HDI is human development index; between 1997 and 2012, which is a space of 12 years, so much has changed in the characteristics of the region and each country has experienced huge changes. The populations, for example have increase immensely with the population of Malawi moving from 10.1 million in 1997 to over 15 million in 2010, a 67percent increase in 12 years (NSO 2012:1).

One clear thing in the trend of these countries is that populations have been growing rather rapidly. This could be both beneficial and detrimental depending on the initial number of people and the need for more labour and the kind of investments made on both physical capital and human capital, to support and deal with such growths in population. Table 4.3 shows that Malawi's population added more than 2 million

people in 5 years. To a larger extent this has created a problem especially in the rural areas where the majority of the population lives. Table 4.3 below presents the population figures for SADC countries from 2006 to 2010.

TABLE 4.3 POPULATIONS OF SADC COUNTRIES 2006- 2010 (MILLIONS)

Country	2006	2007	2008	2009	2010
Angola	15.9	16.3	16.8	17.3	17.8
Botswana	1.7	1.8	1.8	1.8	1.8
DR Congo	63.7	65.8	68.1	70.4	72.8
Lesotho	1.9	1.9	1.9	1.9	1.9
Madagascar	19.2	19.7	20.2	20.8	21.3
Malawi	12.8	12.9	13.1	13.5	15.9
Mauritius	1.3	1.3	1.3	1.3	1.3
Mozambique	19.3	20.6	21.2	21.8	22.4
Namibia	2.0	2.0	2.1	2.1	2.1
Seychelles	0.9	0.9	0.9	0.9	0.9
South Africa	47.4	47.9	48.7	49.3	50.0
Swaziland	1.0	1.0	1.0	1.0	1.1
Tanzania	37.5	38.3	39.5	40.7	42.0
Zambia	11.8	12.2	12.5	12.9	13.0
Zimbabwe	12.0	12.0	12.1	12.2	13.5

Source: SADC, (2011:14)

There is need for a higher population growth in countries like Botswana and Namibia where they have a bigger country and more resources and yet they have very small numbers of people. Malawi on the contrary is a small country (see figure 4.1 above) and yet with a very high population. This has implications on the poverty growth relationship especially on the district level where the study is concentrating on. In a nutshell, the population growth poverty connection is through the amount of land available to each household for farming. Chirwa (2004:1) and (2008:2) found that land holding was a significant factor in determining the poverty status of households

in Malawi. And with the rapid increase in population, land holding has been dwindling substantially. In this study, agricultural production is used as a proxy for economic output and hence a good measure of growth at the district level. It is the expectation therefore that with more and more people in need for land, the production per capita will be drastically affected as there will be more people per hector.

Economic theory of diminishing marginal returns clearly states that output can only increase to a certain point if only one input is increased while other corresponding inputs remain constant, (Kaufman & Hotchkiss, 2006:177). Studies have shown already the need for land for farming in Malawi. Chirwa, (2004:14) found a significant relationship between land holding and poverty in Malawi. The results of Chirwa's study showed that households with large mean land sizes were unlikely to be poor in 2002 and a unit increase in land would lead to a 1.8 percent reduction in the probability of being poor. He then went on to argue that access to land via agricultural production is one of the important factors that can translate growth to poverty reduction (Chirwa, 2004:14).

Figure 4.2 below gives a summary of economic growth for the SADC region for the period 2008-2010. This makes it clear that growth has been significant in Malawi as it shows a clear consistent pattern in the years considered.

FIGURE 4.2: ECONOMIC GROWTH FOR SADC COUNTRIES 2008- 2010
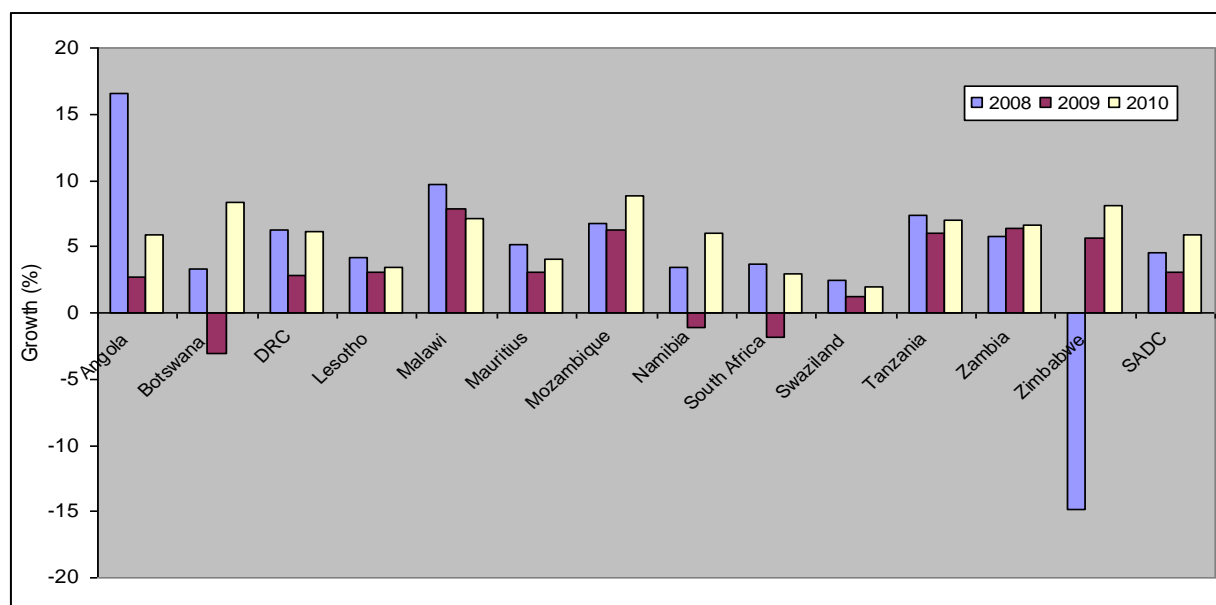
Source, SADC (2011:10**)**

It also contextualizes the growth to indicate that it was not an obvious regional trend since other countries had negative growth in the same period, like Botswana, Namibia, and South Africa and to a very high extent Zimbabwe. The negative growth in South Africa and Botswana were in 2009 as a result of the global financial crisis that hit the USA and Europe and it affected exports of precious minerals which are the main source of Botswana's income from diamond and South Africa's income of gold and platinum among other minerals according to SADC report (2012:4). The global financial crisis was felt in Malawi too but on different levels for different sectors. For example, the flow of aid was affected and that had an impact on the economy (Jumbe & Msiska, 2010:12). The country experienced shortage of foreign exchange and it spiked up to fuel shortage in the years 2010 to 2012.

4.3   SOCIAL ECONOMIC DETAILS OF MALAWI

Malawi is one of the poorest of the least developed countries in the world, ranking 153 out of 169 countries on the Human Development Index for 2010 (WorldBank, 2010:1). It has a Gross Domestic Product (GDP) of around US$4.7 billion and GDP per capita of approximately US$310. The growth rate in the country is around 2.4%

and expected to grow in the years to come(NSO, 2010:1). Between 1997 and 2005 the country experienced modest economic growth averaging around 3 percent and also a high degree of volatility and instability in the macro- economic factors. As a result of high population, with a population growth of 2.4 percent per annum, per capita income increased by only 1 per cent over the period. The years 2005 to 2008 had considerable macro-economic performance. Inflation was held to single digit for the whole time. Positive macroeconomic management, good rains and favourable weather conditions and a supportive donor environment contributed to high growth rates, averaging 7.5 per cent from 2006 to 2008 (WB, 2010:1, IMF, 2009:1) KPMG (2013:1) in their second quarter report pointed out that Malawi's real GDP has been declining . After e rate of an impressive 9 percent in 2009, the rate has slide down to reach an estimated bottom of 1.8 percent in 2012. It is however expected that growth will pick up again in 2013 and 2014, being estimated at 4 percent and 4.2 respectively.

The country is divided into three regions; the north, the central and the southern region. The southern region is the most populated of the three regions (NSO, 2012:4). The country is further divided into districts which are under local government, headed by a district commissioner (DC). Politically a district is further divided into constituencies and these are represented by a member of parliament (MP). Members of parliament are elected official whereas DCs are not elected but appointed officials. For the purposes of this study the focus is on district level as these have different economic and social characteristics which later feed into the general profile of the country. There are no sub-governments on regional level, so the governments at district level report directly to the national government and these districts are under the ministry of local governments. Figure 4.3 and figure 4.4 below presents the map and also structure of how the country is organised. This structure is important in painting a vivid picture of the areas of analysis in the study. The districts are also clearly shown in figure 4.3 of the map of Malawi.

FIGURE 4.3: MAP OF MALAWI SHOWING DISTRICTS REGIONS AND RURALITY
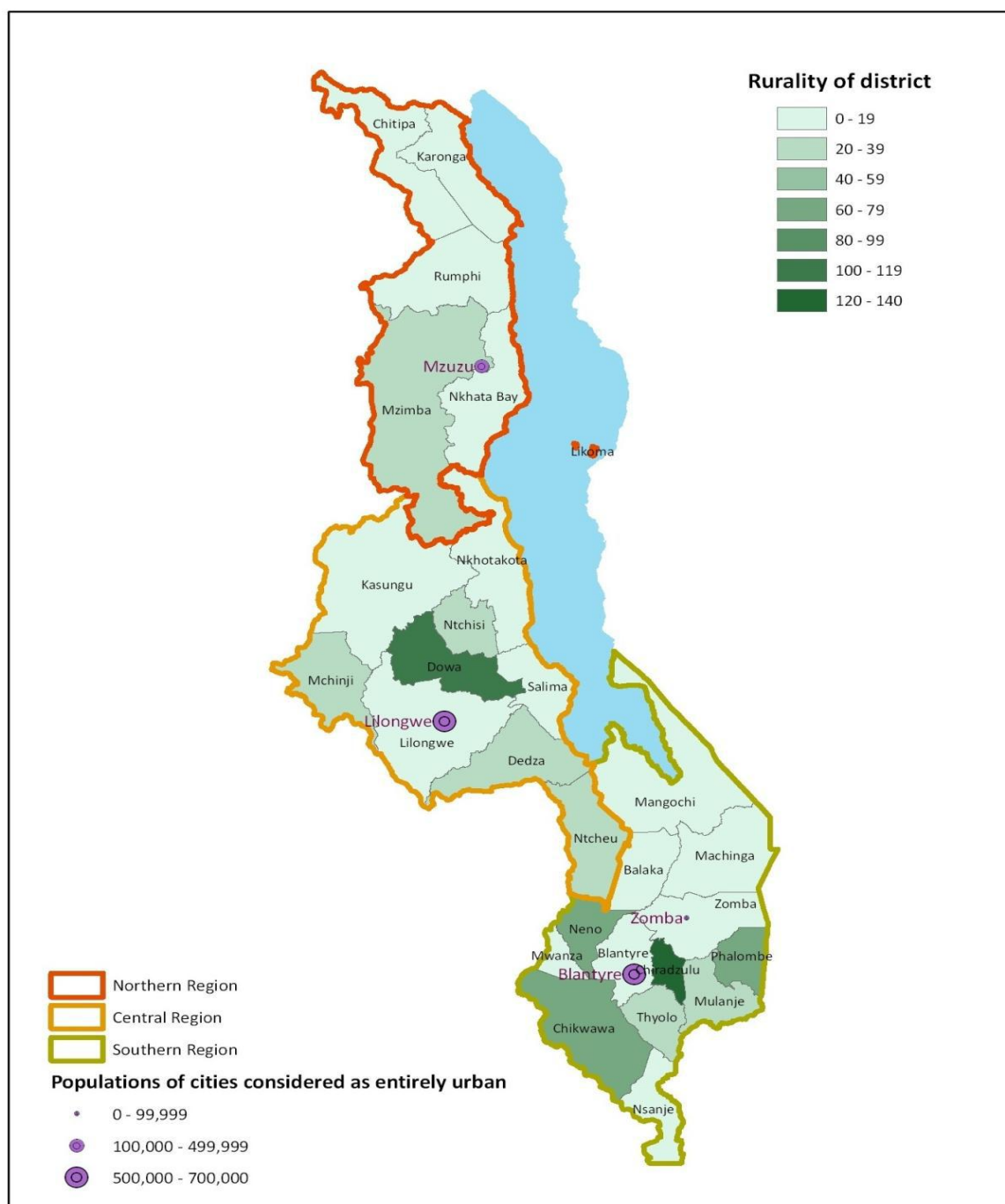
The map of Malawi in figure 4.3 above presents a clear picture of how the country is divided in terms of rural and urban and regions.

FIGURE 4.4: FRAMEWORK OF THE STRUCTURE OF GOVERNMENT IN MALAWI
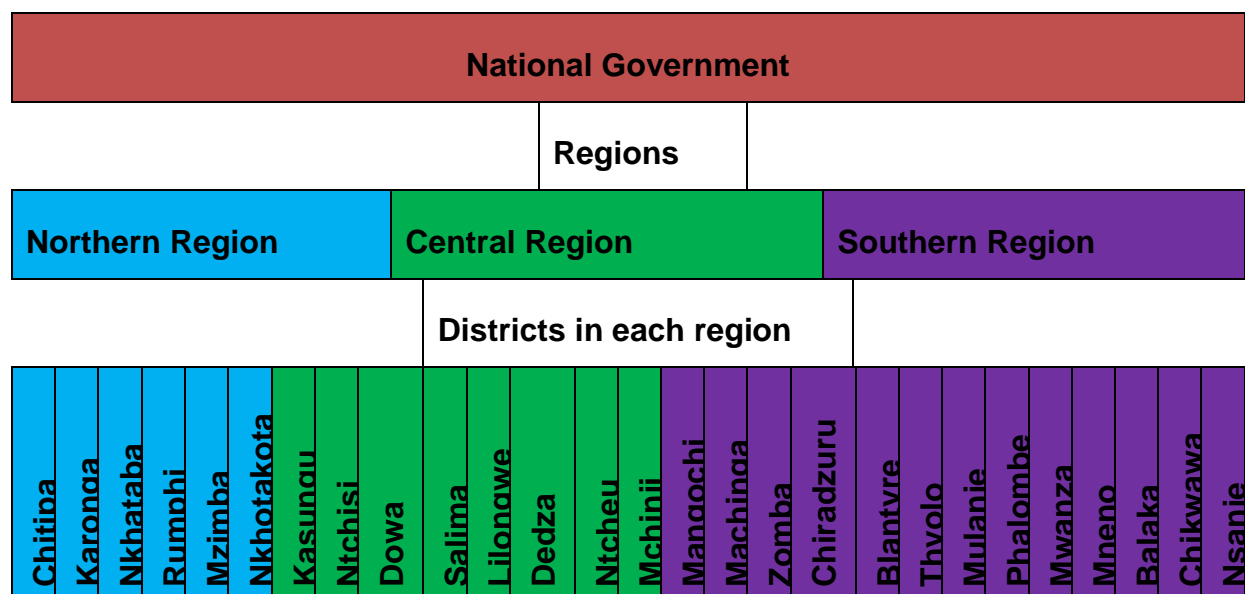
Authors Design

The country has 27 districts with the majority of the districts being in the southern region. The study has based the analysis of poverty reduction channels on district level. Poverty figures at district level have been used measuring poverty using the income measures as discussed in detail in chapter five.

Malawi has an agriculture-based economy, highly dependent on rain-fed agriculture and a small range of products (Chirwa, 2011:1)The agricultural sector supports the majority of livelihoods in the country and provides employment for nearly 90 percent of the population (IHS3, 2012). In 2008, agriculture contributed up to 34 percent of the national GDP and generated over 90 percent of export earnings, most of which was produced by smallholder farmers. Non-manufactured burley tobacco is Malawi's largest export commodity, accounting for 60 percent of merchandise export earnings and a major source of the credit entries in the Balance of payments. Sugar and tea contribute to the remaining 40 per cent of merchandise export earnings, whereas the main imported commodities are fuel, oils and fertilizers as is the case with most developing countries. The import of fertilizer has been very high since the re-introduction of fertilizer subsidy program in 2005. Malawi's agriculture sector is characterized by a dual structure; these are consisting of smallholder farmers and

estates or large commercial farmers. The estate sector mainly produces tobacco, tea, sugar and coffee basically for export. It can be contended that this is the sector that provides most of the employment in the sector.

The study by the government of Malawi (GoM, 2007) reported that in 2006/07, there were about 2.6 million farmers involved in small holder agriculture in Malawi. These are basically households that are engaged in rain-fed maize production. Much of the produce from smallholder farmers is for the food requirements of the households, when they have a surplus; it is then sold on the market. The smallholder farmers cultivate on average around one hectare of land. There is a 30 percent of the smallholder farmers that cultivate less than half a hectare of land. A study by NSO (2012) found that in terms of productivity considered in gender terms, all maize varieties, men had higher yields compared to women.

Smallholder agriculture in Malawi contributes significantly to cash crop and hence export earnings for the country even though a huge part of it is for subsistence. The other important and strategic crop in Malawi is tobacco. Much of the foreign exchange in the country is earned through tobacco exports. Although the leaf is exported unprocessed, that is without any value addition, it still provides the much needed foreign exchange. NSO (2012) found that 19 percent of male-headed households in Malawi grow tobacco as opposed to 7 percent of female-headed households. The production of staple crops is an important component of food security.

In 2007/08, of the 92 percent of Malawian households who grew staple food crops, 91 percent was male-headed households and 94 percent of female-headed households respectively. Maize, the main crop with respect to food security, is grown by about 97 per cent of agricultural households.

Economic growth is essential for poverty reduction in Malawi just like it is for any economy. The real GDP growth rate, however, has been highly erratic because of the economy's dependence on the agricultural sector. The agricultural sector in Malawi is dependent of rains as opposed to irrigation hence it is susceptible to

changes in weather and with the climate change the rain patterns are unreliable, particularly in smallholder agricultural production. This vulnerability directly impacts production and hence the contribution to the GDP. The changed in weather patterns sometimes lead to years of drought and famine. These droughts influences governmental financial allocations and puts pressure on the need for foreign exchange to import food. NSO (2012) argues that even in years when rainfall is adequate, 40 percent of the population of Malawi does not have the purchasing power to satisfy their daily needs. Especially those in the urban areas who normally have to buy food. In 2004/05, it was estimated that the poorest 20 per cent of households accounted for 7 percent of national consumption and the richest 20 per cent of households accounted for 46.3 per cent according to NSO (2012:2)

The picture in recent years show that the country's economy still depends heavily on agriculture and the high crop production achieved during the years 2006 to 2010 has helped the economy to grow (Vandemoortele & Bird, 2011:4). However, there has been a declining trend in the real GDP growth rates for the past three years. For example in 2008, the economy grew by 9.8 percent, while in 2009 the economy grew by 7.0 percent and by 6.5 percent in 2010. Jumbe and Msiska (2010:10) attribute the sliding growth rates to the global financial crisis. The declining tobacco prices, high fuel prices and shortage of fuel in the country were expected to further slowdown the real GDP growth to 6.4 percent in 2011 according to estimates by the IMF (2011) and World Bank (2011). Inflation rates remained relatively stable and in single digits until early 2012 as a result of the improved food situation, however the years starting 2011 saw a surge in inflation rates especially in 2012 when the government implemented a floating exchange rate system that saw the local currency being devaluated by more than 49 percent in the period before the floating system took place. Inflation figures have been in double digits since then and the country has implemented a number of monetary policy adjustments with the floating of the local currency being the main one.

The Malawi Demographic and health Survey (MDHS) of 2010, reported that HIV prevalence had declined to 10.6 percent in 2010 from 15.2 percent in 2005 (2010:1).

Towards the end of 2011 and the beginning of 2012 the economic conditions became desperate due to the overvalued currency and the absence of foreign currency. By the turn of April 2012 (after a change in government due to the death of President Bingu wa Mutharika) The currency was devalued by 49 per cent and the dynamics of most macro-economic variables tumbled. Inflation rose to more than 20 per cent, the exchange rate to the dollar moved from MK160 to MK250 (it was even higher in the black markets where it even got to 300) according to a report by IRIN News (18th May 2012) also reported in other online news like, Malawi Voice, (25th October 2012) and Nyasatimes, (7th May 2012). It still remains an important aspect to find out the impact of economic growth on the lives of the poor and to what extent the government policies have been pro-poor the new economic conditions notwithstanding. Looking at where the country is coming from, there is some progress that has been made on poverty reduction, the drawbacks notwithstanding.

4.3.1 Poverty in brief

The poverty situation in Malawi has been serious and remains the same albeit some changes have taken place. The share of poverty is skewed towards the rural areas and in female and child headed household. (NSO (2012: 217) reported that in 2004/05, 78 percent of rural households in Malawi were poor 25 percent of the total population were female-headed. The percentage of Malawians living in poverty has steadily declined over the past decade, but it still remains high. The percentage of people living below the national poverty line fell from 65 percent in 1998 to 52 percent in 2004, and 40 percent in 2008. In 2007, 90 per cent of the population lived on less than US$2 per day (purchasing power parity) and 74 percent of the population survived with a daily income below US$1.25.40. Poor households in Malawi also tend to be larger – households in the poorest quintile are more than twice as large as households in the richest (NSO 2012:217).

The share of female-headed households in rural areas was ta 24 percent. Poverty has a distinct gender dimension in Malawi. The report by NSO (2012) from the integrated household survey reveals that the incidence of poverty and ultra-poverty appears to be higher in female headed households. In their report they pointed out

that the proportion of the head count poverty was 58 percent for female headed households and 51 percent for male headed households. Also on the ultra-poverty measure, the female headed household's proportion was higher with 27 percent for females and 21 percent for males.

The study by NSO further found that on average, female-headed households earned 60 percent of the annual income of male headed households. Thus for every MK100 a man get, a woman got MK60. About 60 percent of the expenditure of female-headed households was on food, whereas for male-headed households the food expenditure was 54 percent of their total income. As the employment section of this country profile points out, rural women are relatively more concentrated in the agriculture sector, and in particular in subsistence farming, compared to males. The NSO (2012) study showed that 94 percent of rural women work in this in agriculture sector compared to 85 percent of men. this is still a very high percentage which only shows that Malawi's livelihood is dependent on agriculture.

4.4   EDUCATION IN MALAWI

The education system in Malawi is to a great extent tailored towards the British system. This is no surprise since the British were the ones that introduced education in the country during the colonial era (Chimombo, 2005:1). There are three main levels in the Malawi education system; primary, secondary and tertiary. This excludes early childhood development. Primary education has eight grades (standards) in grade 8 pupils sit for the primary school leaving certificate examination. Those that pass are awarded a primary school leaving certificate PSLC. After primary school the best students are selected to secondary schools; not everybody that passes PSLC gets selected because there are fewer places in the secondary schools. The transition rate from primary school to secondary remains very low in the country. However the country has made great progress in primary education. Most of the policies in education have been towards increasing enrolment in primary schools (Chimombo 2005: 155). The secondary sector has four years known as forms in Malawi. Students sit for their Junior Certificate Examinations (JCE) in form two. Those that succeed get a Junior Certificate and proceed to form

three and they write examinations known in the country as the Malawi School Certificate Examination (MSCE) in form four, which in total amounts to twelve (12) years of schooling. MSCE is equivalent to O level, in fact before the introduction of the locally set MSCE, students used to sit for O level from Cambridge and it was called Cambridge certificate. Tertiary education is a privilege in Malawi; as indicated in figure 4.5, only 1.6 per cent of the population has a tertiary qualification. In this study it is assumed that literacy has an impact on poverty. The designation of qualification does not imply that those that do not have any qualification are illiterate. Literacy is the ability to read and write and most people are able to read and write by grade three or four. This explains why those that have no qualification are as high as 74 percent which is a much higher figure than the illiteracy rate in Malawi as indicated in figure 4.5 below. The national picture is not exactly a reflection of the distribution of education in the country. There are differences on regional and district level.

FIGURE 4.5 EDUCATION QUALIFICATIONS ON NATIONAL LEVEL AND BY GENDER
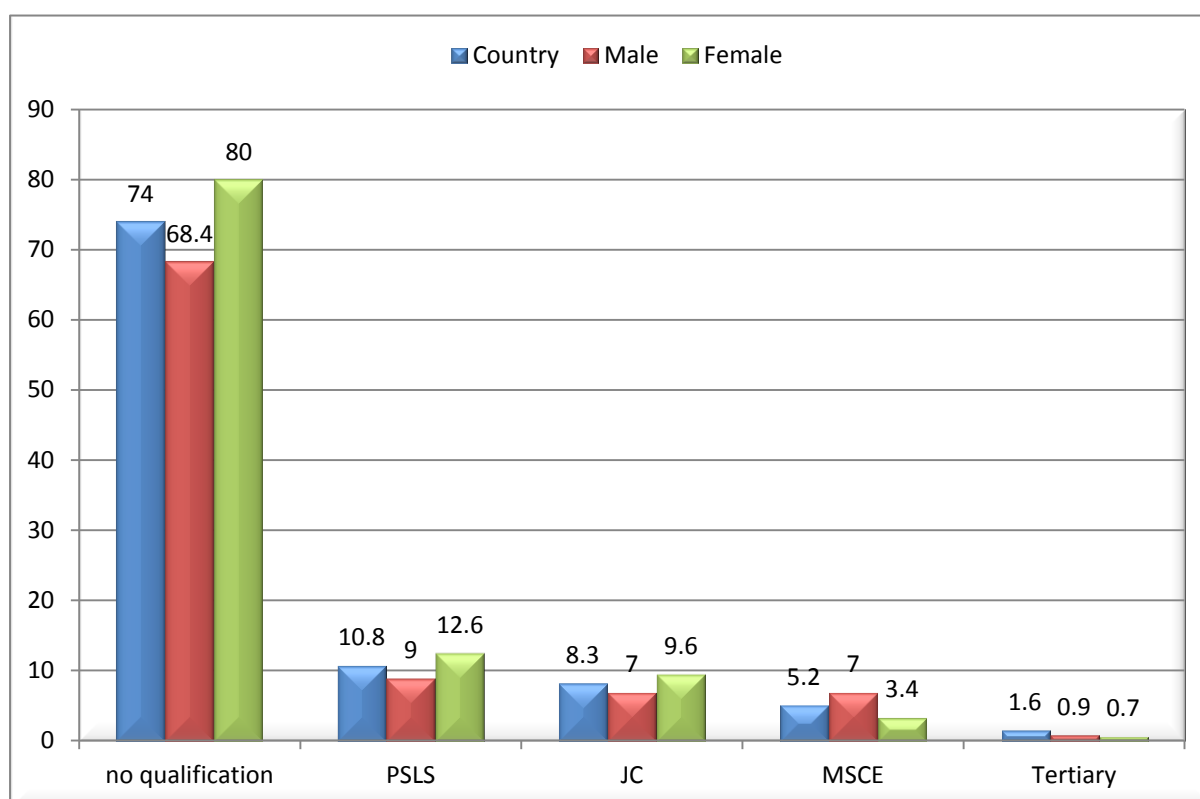
Source: NSO IHS 3, 2012: 23

Figure 4.5 above clearly shows the gender balance in as far as education qualification in Malawi is concerned. There are a lot of people in both sides that have no qualification. With a national average of 74 percent, it is clearly a big and serious problem for the country. The fact that literacy rates are higher or illiteracy rates are lower than those without qualification, points to the fact that people dropout from school before getting a qualification. As mentioned already, the lowest qualification is only after passing in standard 8. Therefore, those that dropout in standards below 8 may be literate but without a qualification.

Figure 4.6 shows the distribution of qualification by regions. The urban areas have by far the most qualifications. This is basically because of the industries and people with qualifications live in urban areas where they work. Besides the urban dominance, the northern region has the most qualification except tertiary

qualifications which are more in the southern and central although the numbers are very low.

FIGURE 4.6: QUALIFICATIONS BY REGIONS
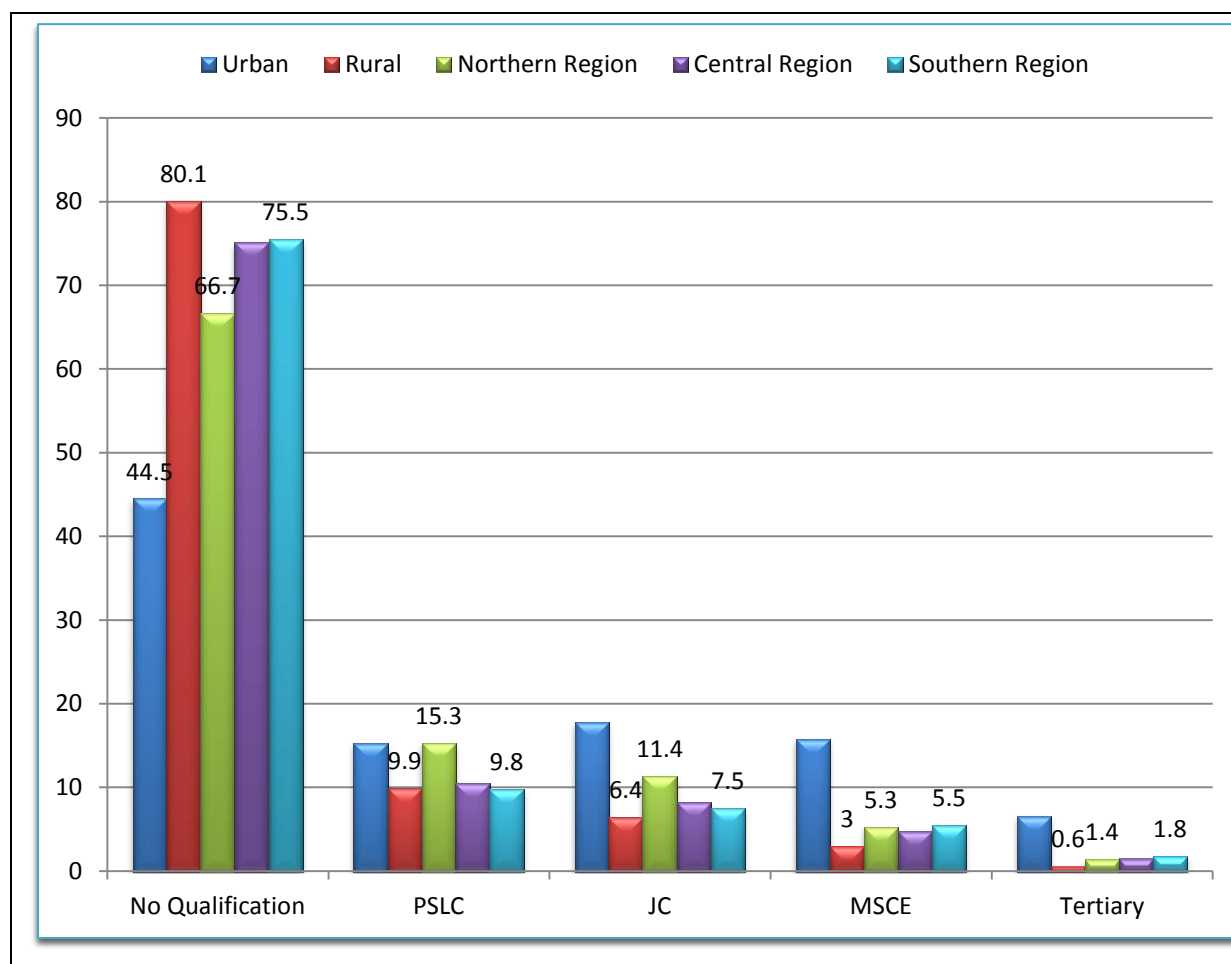
Author's calculation from IHS3 data

It is theoretically understandable that people with better incomes are more likely to have a higher level of education. It could also be that higher education levels are associated with higher incomes (Siphambe, 2000). Figure 4.7 presents the distribution of education by consumption quintiles. The highest quintile has the most literate people compared to the other quintiles with the lowest consumption quintile having close to 50 percent who have never attended school in their life. It will be demonstrated in depth in the methodology chapter and the results thereafter how education levels are associated with, income and by extension poverty. Although the direction of measurement on poverty has shifted over the years from income

based to indexes that incorporate other aspects of wealth, the income part still commands the most influence according to Rio-group, (2006:43).

FIGURE 4.7: EDUCATON BY CONSUMPTION QUINTILE
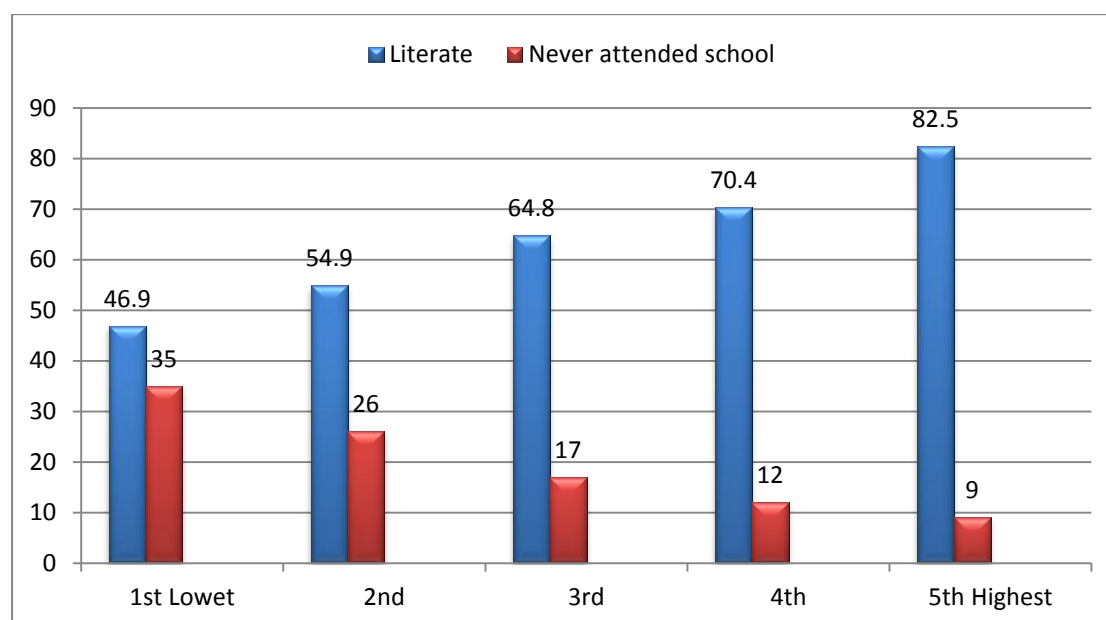
Authors calculations from IHS3 data

Table 4.4 is a repetition of figure 4.7 above to further demonstrate the distribution of education scenario in the country. These figures are a representation of the population that is 15 years or older.

TABLE 4.4 LITERACY AND INCOME

Income Bracket	Literate percentage	Never attended school percentage
1st Lowest	46.9	35
2nd	54.9	26
3rd	64.8	17
4th	70.4	12
5th Highest	82.5	9

Source: NSO, IHS 3, 2012: 21

The education scenario in the country is different between the rural and urban areas. this may reflect the different levels in exposure and availability of role models. Those in the rural areas are more likely not to attend school and remain illiterate as opposed to those in the urban areas where there are so many role models that inspire young people to attend school. Also the fact that most parents that are based in rural areas have very low or less education plays a role on the likelihood of their children to attend school. Research in education attendance show that education background of the parent is a major determinant of the child's likelihood to attend or complete school (Blanden & Gregg, 2004; Dunga, 2012:60; Reardon, 2011). People that have no qualification in the rural areas in the age 15 years and above take up 80.1 percent compared to 44,5 percent in the urban areas. Table 4.5 presents the distribution of qualification between the rural, urban and the regions.

TABLE 4.5: DISTRIBUTION OF QUALIFICATIONS BY AREA AND REGION

	No qualification	PSLC	JC	MSC	Tertiary
Urban	44.5	15.3	17.8	15.8	6.6
Rural	80.1	9.9	6.4	3	0.6
Northern Region	66.7	15.3	11.4	5.3	1.4
Central Region	75.1	10.5	8.2	4.8	1.5
Southern Region	75.5	9.8	7.5	5.5	1.8

Source NSO, 2012:26

The number of people who have a qualification is significantly different in the districts. Whether this is a bias of policy or a coincidence is not clear. Although it is clear that different districts in Malawi have different populations and different distributions of populations shared between the rural and the urban centres. The districts in the Northern region have the higher numbers of qualifications compared to those in the other two regions. Table 4.6 provides details of the different percentages for those with a qualification for the population of 15 years and more.

One clear picture coming out of the table is that the cities have the highest numbers of qualification taking the biggest share on those with a tertiary qualification.

TABLE 4.6: EDUCATION QUALIFICATION BY DISTRICT

District	None	PSLC	JC	MSC	Tertiary
Chitipa	67.4	14.4	12.7	4.8	0.7
Karonga	71.6	12.1	10.8	4.8	0.6
Nkhatabay	65.9	18.8	10.0	4.4	0.9
Rumphi	55.1	23.5	13.0	6.8	1.6
Mzimba	74.6	13.1	8.2	3.3	0.7
Mzuzu City	**36.1**	**17.2**	**25.0**	**14.6**	**7.0**
Kasungu	73.0	15.5	8.1	3.0	0.4
Nkhotakota	69.8	14.4	9.9	5.0	0.8
Ntchisi	82.9	8.6	6.6	1.7	0.2
Dowa	73.9	11.9	7.4	4.7	2.2
Salima	83.4	8.9	4.5	2.5	0.8
Lilongwe	81.7	7.6	6.5	3.5	0.8
Mchinji	78.9	9.8	7.5	3.6	0.2
Dedza	89.0	6.0	3.4	1.3	0.3
Ntcheu	76.9	9.6	8.5	4.6	0.4
Lilongwe City	**48.4**	**14.1**	**17.4**	**14.0**	**6.1**
Mangochi	91.0	4.1	2.3	2.4	0.1
Machinga	87.0	6.3	4.2	2.2	0.3
Zomba	77.3	11.5	6.5	4.0	0.8
Chiradzulu	70.8	12.2	10.3	5.4	1.3
Blantyre	74.3	10.9	9.4	3.8	1.6
Mwanza	75.9	9.6	7.8	5.0	1.7
Thyolo	77.8	10.8	6.5	4.4	0.5
Mulanje	83.2	9.2	4.5	2.5	0.5
Phalombe	82.7	8.5	5.3	3.0	0.6
Chikwawa	85.7	7.0	4.9	2.2	0.3
Nsanje	84.4	9.4	4.7	1.3	0.2
Balaka	77.5	9.3	8.4	4.2	0.6
Neno	78.1	11.4	7.6	2.5	0.5
Zomba City	**41.8**	**15.0**	**16.0**	**20.3**	**6.9**
Blantyre City	**40.0**	**15.8**	**17.7**	**17.9**	**8.6**

Source: NSO 2012: 26

The difference in the levels of education across the districts is a clear indication that the poverty rates are also different and affected by different factors. The poverty figures for the Northern region for example are much lower than those for the south. The urban areas also have higher levels of education and as will be shown in the results chapter, there are lower poverty rates for the urban areas.

4.5 ECONOMIC GROWTH, INFLATION AND FDI IN MALAWI

In the analysis of the impact of economic growth on poverty and the channels through which this impact is felt, the understanding of the macro-economic factors like inflation and FDI becomes more important. Economic growth is a well-known and researched factor in as far as determinants of poverty reduction is concerned). A study by Dollar and Kraay, (2000:1; 200:6) is one of the most emphatic proponents of the importance of growth on poverty reduction. In their study where they used a sample of 137 countries across the world, they found that economic growth and poverty have a one to one relationship, where a one percent increase in GDP would lead to at least a one percent reduction in poverty (Dollar & Kraay, 2000:1). In this chapter as a basis for the analysis to be done in detail in chapter six, the study presents the growth scenario for Malawi and attempts to show that there has been a significant growth to justify an investigation of its impact on the poverty front.

Malawi has experienced growth for over a decade. The years starting 2004 saw the highest growth figures in Africa (Savalle and white, 2013:2). Malawi was among the fastest growing economies in the world ranking second to Qatar in 2008 (IMF, 2009:1; Vandemoortele & Bird; 2011:3). Much of the success was attributed to sound macroeconomic management (Vandemoortele & Bird, 2011:3). Being an agro-based economy, which heavily relies on rain, the country also benefited from good rains and a fertilizer subsidy program (Dorward & Chirwa, 2011:1). The country sustained six years of uninterrupted economic growth between 2004 and 2009 (AfDB & OECD; 2010:1). The average annual GDP growth rate was 7 percent, reaching almost 8 percent in 2009. This was well above the sub-Saharan African average of 5 percent over the same period and the Latin American average of 4 percent. Since 2004 to 2008, Malawi's GDP increased by over 40 percent, from $1.8 billion to $2.5

billion using 2000 US$ prices. taking into account the population growth, GDP per capita would have risen by almost a third, from $130 to $166 (Randall, *et al.*, 2010). The country has also managed to sustain growth amid global recession, thanks to 'generally sound macroeconomic policies' that were in place until 2009 (Nsiku, 2012:1). Figure 4.8 provides a trend analysis of economic growth, inflation and Terms of trade for the period begging 1960 to 2008

FIGURE 4.8: PHASES OF GDP PER CAPITA IN MALAWI 1960-2008
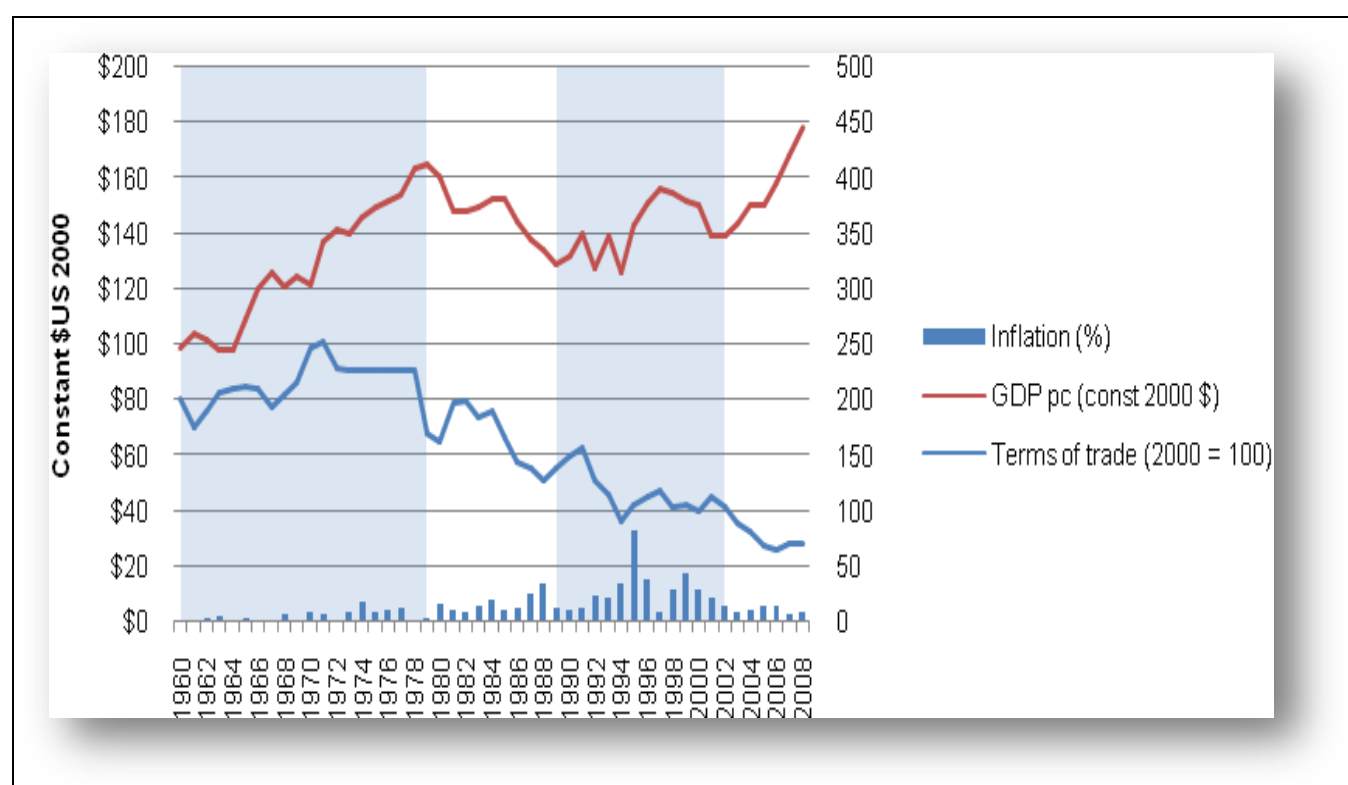
Source: Lea and Hanmer, (2009:3)

The trend in GDP per capita has been a growing one, steadily going up with a few interruptions in the late 1990s. There was a significant reduction in the 1980s due to an international shocks. There was an oil shock and a war in Mozambique which led to a big influx of refugees and a reduction in economic activity. This was felt not only by Malawi but also other countries in the region (Lea & Hanmer; 2009:3). As a result of the oil shock by the end of the 1970s, the terms of trade were negatively affected and declined by 25 per cent (Lea & Hanmer, 2009:3). These were also the years when a number of Malawians were working in the mines in South Africa. Lea and

Hanmer (2009) argue that after the collapse of trade due to the oil price shock, demand for migrant labor fell down, and it resulted in the reduction of remittance income to Malawian Households (Lea and Hanmer 2009:3).

Another aspect that can be looked at from the macro-economic aspects is the budget deficit. A country that has high deficits is likely to have other macro-economic fundamentals trending in a wrong direction. A budget deficit is always financed through borrowing; it could be locally or externally. Whichever way, there are associated consequences. Locally it affects interest rates and may crowd out private investment. Figure 4.9 shows the budget deficit for Malawi as a percentage of the GDP from 1990 to 2008.

FIGURE 4.9: BUDGET DEFICIT AND GDP
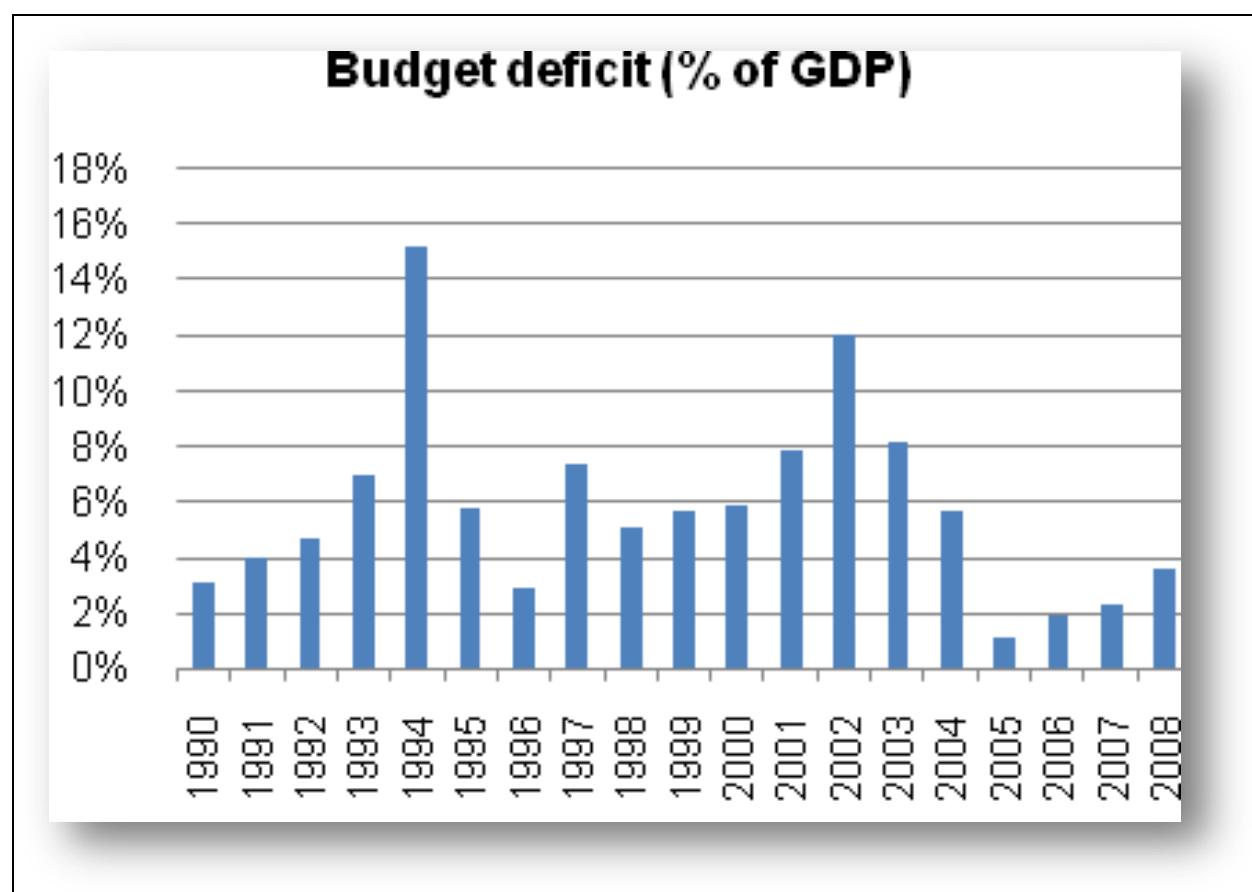
Source: Lea and Hanmer, (2009:5)

There is a relationship between budget deficit and domestic debt. As pointed out in the paragraph above, each deficit is either financed locally or externally. When deficits are financed locally, the government accumulates domestic debt. High levels of domestic debt are an indication of years of fiscal deficits. This can be used as an indicator of a country's economic stability. High levels of domestic debt indicate unstable macro-economic environment, which in most cases are also associated with high interest rates and high inflation rates. Figure 4.10 shows the levels of domestic debt for Malawi for the years starting 2002 to 2008.

FIGURE 4.10: MALAWI'S DOMESTIC DEBT 2002- 2008
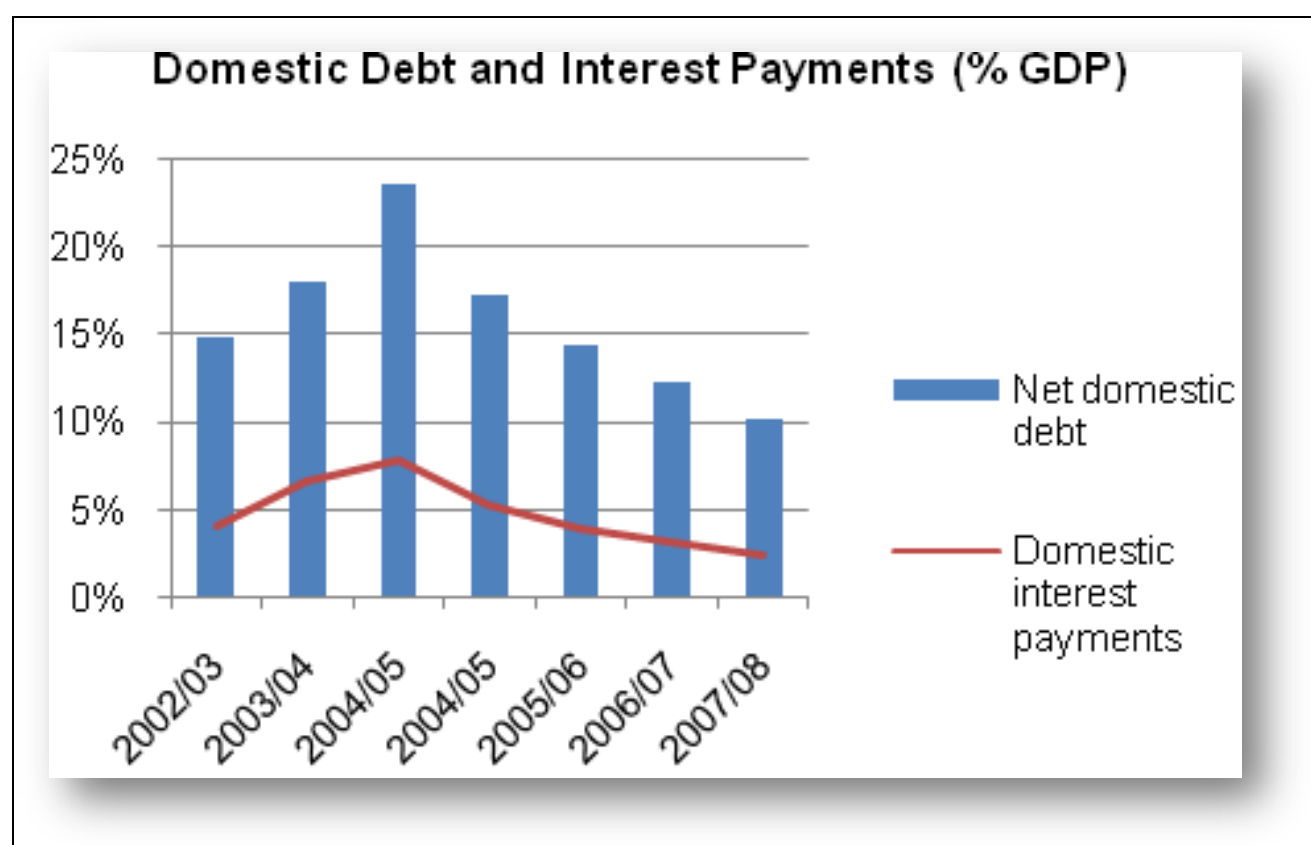
Source: Lea and Hanmer, (2009:5)

Figure 4.10 shows that high levels of domestic debt were associated with high domestic interest payments.

4.4.3 Maize Production

Agricultural activity at small holder level is synonymous with maize production in Malawi. Maize being the staple food in the country is cultivated in all the districts in the country and presents a better reflection of the agricultural production picture in as far as small holder farming is concerned. Other crops that are of strategic importance are tobacco, tea and coffee among other (GoM, 2011:2). One clear indication of the realisation as to how important maize production is in the country, are the policies introduced in the recent decade. The government of Bingu wa Mutharika in 2004/5 reintroduced the fertilizer subsidy program in the face of international opposition to the policy. Through the Fertilizer Subsidy Program, the government has made increasing maize yields the mainstay of agricultural policy, and has designated it a "strategic crop" subject to import and export bans according to Chirwa *et al.*, (2008:9)

The fertilizer subsidy program which is being continued by the Joyce Banda administration is a very big national wide program aimed at assisting farmers with the purchase of fertilizer at a much lower price. This program has in the past 6 years boosted the production of maize, among other crops. The fertilizer subsidy has for the past 6 years taken up a huge portion of the national budget. According to the 2012/13 was allocated MK40.6 billion up from MK17.4 billion in the 2011 allocation (GoM, 2012:1, Nyasatimes, June 8, 2012). The 2001 subsidy program benefited 1.6 million households in 2010/2011 growing season and cost 17.4 billion kwacha which resulted in the allocation to the ministry of agriculture to stand at 12.6 percent of the total budget (GoM, 2011:46)

Agricultural production and policy pertaining to the development of agriculture are dominated by maize production in Malawi. Maize is both considered as food crop and cash crop for most households. Efforts have been made over the years to achieve some diversification, and there has seen a notable increase in smallholder tobacco production, but still the area under maize cultivation is still roughly equivalent to that of all other crops combined (Chirwa, 2004:4; NSO, 2012:3). It is also reported in Chirwa (2004:4) that over 60 percent of national calorie consumption derives from maize; 97 percent of farmers grow maize; and over half of households

grow no other crop. Most of this maize farming is dependent on rains, and depending on the patterns of rain in that year, production can be high or low. Given Malawi's vulnerability to drought, the maize harvest is thus central to the welfare of the population, and one of the most important political and social issues. The importance of maize is reflected in the prominence of food security emphasis in public policy discussion and enactments.

FIGURE 4.11: PER CAPITA MAIZE HARVEST AND GDP
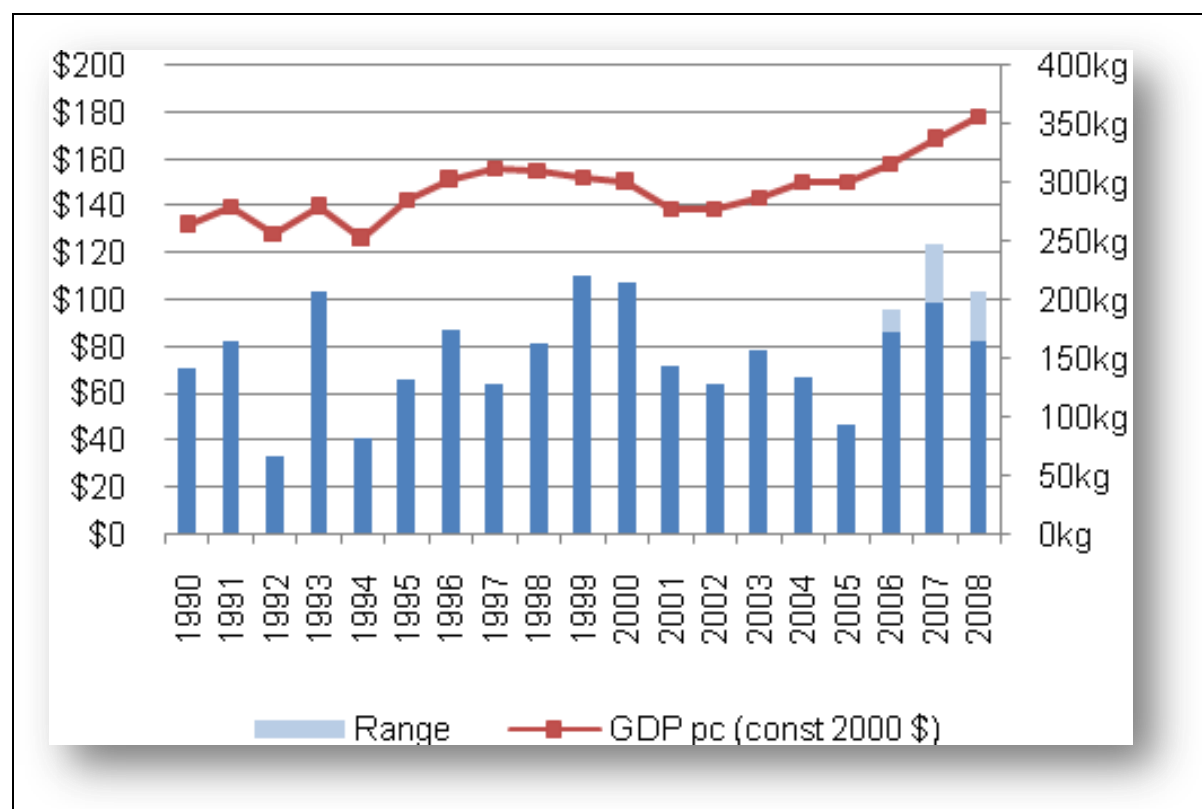
Source: Lea and Hanmer, (2009:9)

Figure 4.11 above indicates the relationship in trend between per capita maize harvest and GDP per capita. There is a clear trend as evident in 1993 figures, 1999, 2000 and 2008 where an increase in the maize production had an associated positive increase in the GDP per capita. The analysis in chapter 6 of this study draws on this positive association and attempts to identify the direction of causality to consequently link it to poverty reduction.

4.4.4 Foreign Direct Investment (FDI)

Most developing countries are still struggling to realise substantial changes in manufacturing and other skill based industries due to the absence of Investment capital (Griffith-Johnes, 2003: 269; Ghose, 2004:3). Malawi just like most countries in the sub-Saharan Africa, with the exception of South Africa, still has very minimal foreign direct investment (Nakagawa *et al.,* 2009:9). There are a number of reasons why the attraction of FDI has not been very successful in the country. Some of the reasons include poor power and water infrastructure (Nakagawa *et al.,* 2009:9). This makes Foreign Direct Investment (FDI) an important aspect of most growth oriented policies in these countries and in Malawi particularly. FDI attraction is one of the goals of the Malawi Investment strategy. The Malawi Investment Promotion Agency (MIPA) is the body that was set under the Investment Promotion Act of 1991 to be in the forefront of putting up strategies and incentives to promote and encourage FDI (MIPA; 2010). Malawi has put in place a generous incentive package for FDI. Since this study is mainly focusing on the growth at district level, it is important to point out that most districts in Malawi do not directly benefit from FDI. This is because most investments target urban areas where market is assumed to exist for most products. An exception is on such investments as mining where the uranium mine for example is located in the rural areas of north of Malawi. The cities in Malawi especially Blantyre and Lilongwe benefit the most from FDI. Table 4.7 shows the companies that are linked to FDI in Malawi

TABLE 4.7: AFFILIATES OF FOREIGN TRANSNATIONAL COMPANIES IN MALAWI

Company	Home Economy	Industry	Sales (US$ m)	Employees
A. Industry				
Illovo Sugar Malawi	South Africa	Agriculture	98	10594
Transglobe produce Exports	Mali	Food produce, beverages and tobacco	3	1800
Vaimore Paints	UK	Chemicals and Chemical Products	1	60
Limbe Leaf Tobacco	United States	Food products, beverages and tobacco	-	5300
Mandala	UK	Chemicals and Chemical products	-	2000
Bata shoe company	Canada	Leather and leather products	-	380
B Tertiary				
CFAO Malawi Limited	France	Wholesale Trade	2417	300
Metro cash and Carry Malawi	Germany	Distributive Trade	47	1800

Source: Nakagawa *et al.*, (2009:60)

There are a number of incentives that exist in the country intended to promote FDI flow into the different industries. Below are some of the incentives

General Incentives

There are allowances that are allowed of up to 40 percent for used buildings and machinery, also up to 100% allowance on investment for qualifying expenditure that is associated with new building and machinery. 50% is also included as an allowance for training costs. The country also allow allowance for manufacturing companies to deduct all operating expenses incurred up to 25 months prior to the start of operations, duty free status on raw materials used that are intended for manufacturing, among other things.

Nakagawa, *et al.* (2009) also pointed out that tax losses are carried forward of up to seven years, which allows companies to take advantage of allowances, Additional 15

percent allowance for investment in designated areas of the country. (Nakagawa, *et al.*, 2009:60).

Table 4.7 above gives an indication of the companies in Malawi that are a result of FDI. Much as it can be argued that most of the FDI money is directed to urban areas, it is incorrect to claim that its impact is not felt in the rural areas, indirect as it may. Limbe leaf Tobacco for example is mostly helping tobacco farmers who are basically mostly from the rural areas. The fact that this study looks at productivity in agriculture as one of the proxies for growth makes the FDI poverty link more relevant. The country has not been doing well in attracting FDI if compared to its neighbouring countries (Nsiku, 2013:3). Beside the investment made by a Brazilian company, Vale Logistics Limited in 2011, the country has had very low levels of FDI (Nsiku, 2013:3)

FIGURE 4.12 FDI FOR MALAWI AND NEIGHBOURING COUNTRIES
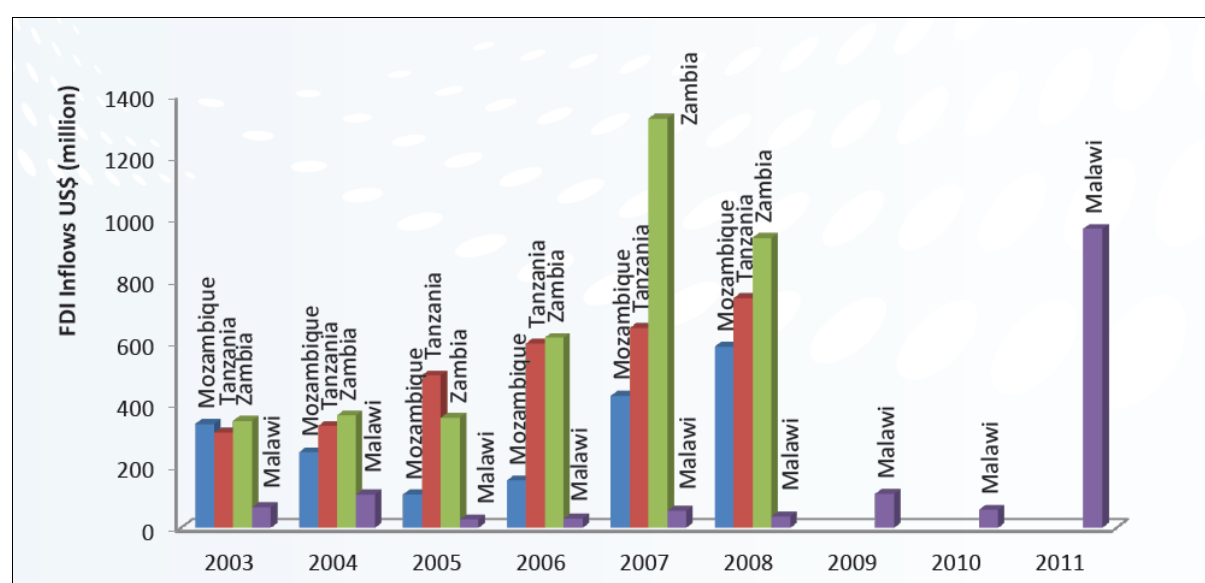
Source: Nsiku, 2013: 4

There is a clear picture of how FDI inflows have performed in the country over the past 10 years. The year 2011 saw a huge inflow due to the construction of a rail line by Vale Logistics Company (Nsiku, 2013:3).

4.4.5 Inflation in Malawi

The changes in poverty that have happened over the years especially the increase in 2012, is to a greater extent connected to the changes in price level as a result of shortage in foreign exchange (Nsiku, 2013:1) It is therefore pertinent to also look into the inflation scenario in Malawi. The general price level of the country has a great impact on its people's welfare. Inflation is a good indication of the cost of living from an ordinary person's perspective. Inflation theoretically measures a considerable and consistent increase in the general price level. Using a basket of commodities that are used as a reflection of what is happening on the market; inflation is calculated from the consumer price Index. In Malawi the Basket used to measure the consumer price index comprises commodities such as maize price, sugar, paraffin min bus transport among other things. These products are considered what most people leave on, and these are the basics of a life style in Malawi. Over the years inflation has been in single digits, it was only in 2012 when the new government took over after the death of president Bingu wa Mutharika that inflation went considerably high (Nyasatimes, May 2012; NSO, 2012:1).

During late Bingu wa Mutharika's time the country's exchange rate was controlled heavily by the government in conjunction with the central bank. The rate against the dollar was pegged at low rate to the extent that in early 2012, the official exchange rate was K150 to a dollar, and yet on the black market the rate ranged from K300 to a dollar or more, and people were forced to transact on these rates because although the rate in the bank was good, there was hardly any foreign exchange in the banks. The government still managed to hold the increase in the price level as there was no justification for the same due to a relatively (though not available) low exchange rate to the dollar. The main reason why inflation is directly linked to the exchange rate in Malawi is the fact that Malawi is an importing country. Most of the products consumed in Malawi are imported from other countries, either as a finished product or something that needs repackaging, but very few products are manufactured in Malawi (IMF, 2013:1). With the strain on the currency increasing more and more it became clear that the exchange rate could not be controlled any

more. Some of the pressure that convinced the government that the fixed exchange rate would be a disaster included the fact that it became very difficult for the country to import important commodities. The country faced (and the problem still persists as in December 2012) an acute shortage in fuel, thus petrol and diesel became a very scarce commodity. The black market for these commodities flourished selling the commodity at a price three times higher than the official pump price. By April 2012 the president died a sudden death and the government changed from that of Bingu wa Mutharika to the vice president Joyce Banda. This change in government had big implications on policy. Within the first month of her administration, the new president appointed a new reserve bank governor. And within days the new governor announced that the exchange rate would be floated and that the kwacha currency was to undergo a major devaluation. The central bank went on to devalue the kwacha by at least 40 percent. The exchange rate to the dollar went up from MK160 to MK250 to a dollar (Nyasatimes, June 2012).

The result of this change in government and the consequential change in exchange rate policy led to a massive increase in prices. Inflation moved from around 8 and 9 percent in February 2012 to more than 30 percent in December 2012. This big shift is not reflected in the data to be used as most of it was collected before the massive change in policy and government. It is important to point out however that the exchange rate that persisted in the country before the Joyce Banda administration was a manipulation of the market conditions and it led to a lot of distortions in the economy. The inflation rates that existed were due to a constant intervention into the market by the government. According to the international monetary fund IMF, inflation in Malawi has been as below.

TABLE 4.8: INFLATION IN MALAWI

Year	Inflation Rate	Year	Inflation Rate
1987	25	2000	29.597
1988	33.8	2001	27.247
1989	12.453	2002	17.43
1990	11.857	2003	9.586
1991	8.22	2004	11.242
1992	23.236	2005	15.464
1993	22.775	2006	13.904
1994	34.659	2007	7.961
1995	83.148	2008	8.71
1996	37.733	2009	8.427
1997	9.137	2010	7.41
1998	29.77	2011	7.6
1999	44.759	2012	28.3

Source: NSO website: 2013:1

The monthly inflation figures for 2012 show the impact of the devaluation that was effected in May 2012. The inflation figures jumped from 12.4 percent in April to 17.3 percent in May and it kept on rising as indicated in Table 4.9

TABLE 4.9: MONTHLY INFLATION FOR 2012

Month	National	Urban	Rural
January	10.3	13.8	8.4
February	10.9	14.4	8.9
March	11.4	14.9	9.5
April	12.4	15.5	10.7
May	17.3	21.2	14.5
June	20.1	24.2	17.6
July	21.7	25.1	19.6
August	25.5	28.2	23.8

Source: NSO, 2012:1

The figure 4.13 shows that the year 2007 to 2011 inflation was in single digits. During these years the country registered very positive macroeconomic conditions, growth was in the highest points ever and donor confidence was surging. The trend from 1970 to 2010 is presented in the figure 4.13 below.

FIGURE 4.13: INFLATION TREND IN MALAWI 1970-2012
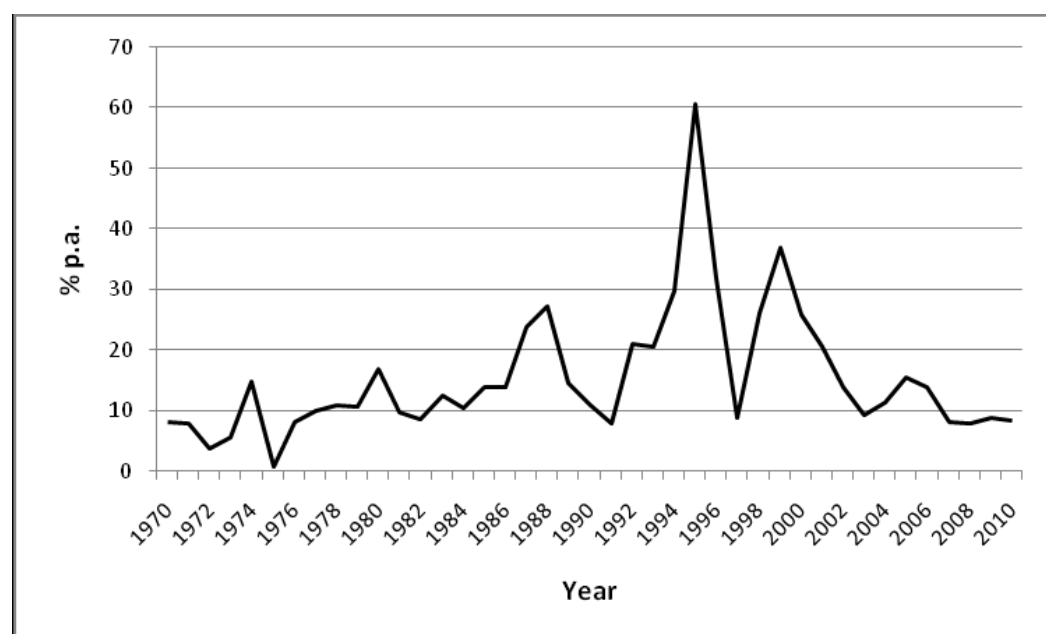
Inflation is usually determined or affected by the monetary policy in place or being implemented in a particular country (Gali, 2008:1). This does not dismiss the fact that so many other factors affect the inflation and that monetary policy is just one of those factors. It is however a recognition of the importance of monetary policy amongst the other factors. The relationship between inflation and discount rate, lending rate and Treasury bill rate were conducted by Mangani (2011:1) and found out that they followed a similar pattern. The Trend is presented in figure 4.14 below where Discount rate, Lending Rate and Treasury bill rate are plotted together showing the same pattern as that of inflation in figure 4.14.

FIGURE 4.14: DISCOUNT, LENDING AND TREASURY BILL RATES IN MALAWI
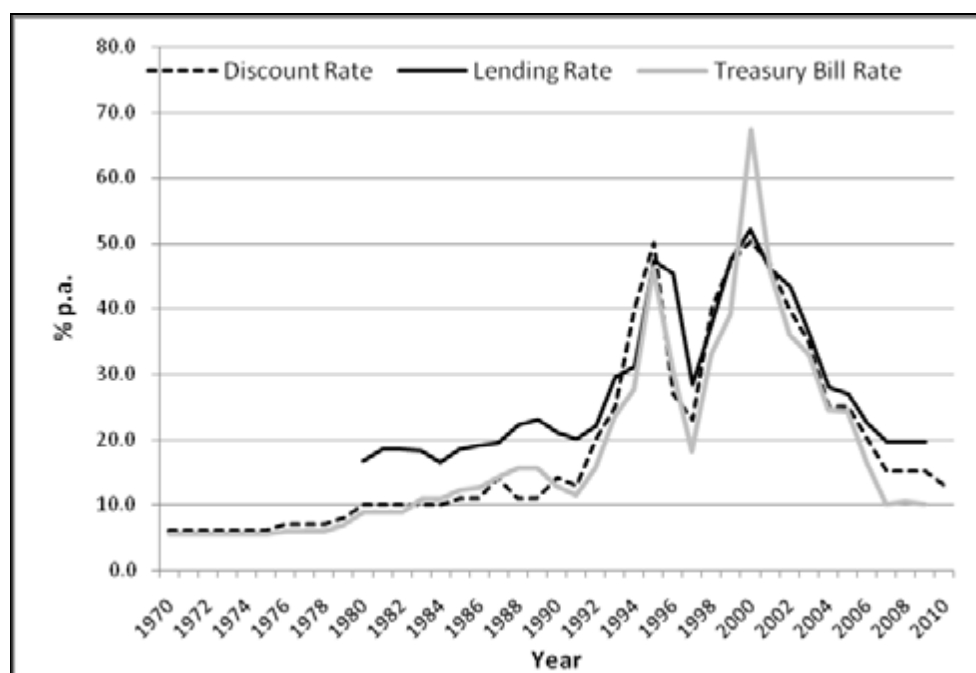
Sources: Mangani, (2011:12)

Mangani (2011:12) in explaining the dynamics of inflation and the related cohorts of rates such as the discount rate and the treasury bill rate stated that, "In keeping with the global trend, monetary policy up to the late 1980s was principally guided by Keynesian theories of demand management, hence direct control of interest rates, credit, exchange rates and foreign exchange. The Bank rate averaged 6.5 percent in the 1970s and 10.8 percent in the 1980s, while the average base lending rate was 19.1 percent between 1980 and 1989. This period was also associated with a mixed inflationary pattern, averaging 8.0 percent in the 1970s, rising to over 27 percent in 1988, and averaging 15.0 percent in the 1980s. As already stated, the economy registered relatively high growth in the 1960s and 1970s, but low growth in the 1980s." (Mangani, 2011:12)

4.4.6 Employment in Malawi

The importance of employment on poverty reduction as emanating from growth is ubiquitous in both theory and empirical literature. The definition of employment in

Malawi is slightly different from the sense that theory points out to. The fact that more than 80 percent of the people in Malawi live in rural areas and work in agriculture makes the need to include those in this sector accounted for as employed. Unemployment is defined as the number of people in the labour force that are looking for jobs, in proportion to the whole labour force. The definition of who is looking for a job, or who is willing to work but is not working is the striking part. if someone is working in his small plot of land planting maize is that an employment? Are people self-employed if they are subsistence farmers? The need to distinguish between these people and those that are in a paid employment is important in looking at the effect of employment or unemployment on poverty. If a household that is already categorised as poor has an employment then it is difficult to improve their circumstance with employment. If a poor household is unemployed, then gaining employment can change their circumstance. The employment and unemployment figures as collected by the National Statistics Office (NSO) in Malawi are by any conversion misleading. Table 4.10 shows the figures for 2009

TABLE: 4.10 EMPLOYMENT STATS - MALAWI 2009

	Labour force participation			Employment rate			Unemployment rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Malawi	85	83	86	99	99	99	1	1	1
15-24	58	53	63	96	95	97	4	5	3
25- 34	98	98	98	99	99	99	1	1	1
35 -49	99	99	99	100	100	100	0	0	0
50 -64	98	99	98	100	100	100	0	0	0
65 +	90	95	86	100	100	100	0	0	0

Source: Malawi Statistical yearbook (2010: 33)

From Table 4.10 above it is clear that employment as is known by the national Labour organisation cannot be that high in a poor country like Malawi. The issue is in the definition of what constitutes employment in Malawi. Hull (2009:69) argued that

employment can be significant in reducing poverty only when the quality of employment under consideration is good enough.

The employment quality argument is presented in detail in chapter 3 of this study. It is clearly laid out how growth employment poverty reduction trajectory works in any economy. Employment is put in different categories and the quality of employment is an important factor in determining the effect of employment on poverty.

TABLE 4.11: EMPLOYMENT BY EDUCATION LEVEL AND LOCATION

	Total	Male	female	Total	Male	Female	Total	Male	Female
None	92	91	92	99	99	100	1	1	0
Primary1-5	86	83	88	99	99	99	1	1	1
Primary6-8	81	80	82	99	99	99	1	1	1
Secondary+	77	80	74	97	97	96	3	3	4
Urban	77	77	78	96	96	97	4	4	3
Rural	86	84	87	99	99	99	1	1	1

Source: Malawi Statistical yearbook (2010:33)

Table 4.6 above shows that employment rate is very high and even exaggerated. The fact that people with no education have an employment rate of 99 percent in Malawi is a clear indication that it is those working in agriculture and in piece and manual type of labour which is seasonal and temporary. A majority of these people are self-employed and hence would not account for employed in the real theoretical sense.

5.0   CONCLUSION OF the country's profile

This chapter four of the study on channels of poverty reduction in Malawi has three main sections; the first section is comprised of a presentation of the basic details and profiles of some of the countries in Southern Africa, specifically those in the SADC region. The SADC countries have been included in brief to put the study on Malawi

in context. It only makes sense to make a case of how far behind or better off Malawi is in some of the measures to be covered if it is clear how other countries with similar circumstances are performing. The profiles for the other countries are however very brief so that the study does not lose focus on Malawi. Some of the aspects that have been highlighted in this section are population changes over time, GDP growth for Malawi in relation to the other SADC countries, competitiveness ranking and HDI among other things. The second section of the chapter presents a detailed profile of Malawi as a case study country and reviews the idiosyncrasies of the districts in Malawi which are used as units of measurements in the poverty analysis.

Section two of this chapter discussed the idiosyncrasies of the country. The aim of discussing these issues is to profile the country in such a way that the channels of poverty reduction that are to be discussed in detail in the analysis chapter are well understood. Some of the aspects that have been discussed in detail are the education scenario in Malawi, FDI, agricultural production proxied by maize production, GDP and Inflation among other macro-economic variables. The chapter has shown that the education scenario in the country is different between the rural and urban areas. This may reflect the different levels in exposure and availability of role models. Those in the rural areas are more likely not to attend school and remain illiterate as opposed to those in the urban areas where there are so many role models that inspire young people to attend school.

The chapter has also laid out the employment scenario in the country. It has been pointed out that, the fact that people with no education have an employment rate of 99 percent in Malawi is a clear indication that it is those working in agriculture and on piece and manual type of labour which is seasonal and temporary.

CHAPTER 5:   RESEARCH DESIGN AND METHODOLOGY OF THE CHANNELS OF POVERTY REDUCTION IN MALAWI

5.1   INTRODUCTION

This chapter on research design and methodology presents the derivation of the model that has been used to get the results in chapter six and the data collection process for the study. Since most studies that look at incidences of poverty and changes in incidences of poverty over time rely on time series data or panel data that includes both time series and cross-sectional data, it is usually impossible to use primary data as trends can only be seen over time (Dollar and Kraay 2000). A sensible time series data set spurns for years. This study is therefore fortunate that there is a data base at the National Statistics Office (NSO) of Malawi, and that they (NSO) have just finished a third round of a national wide rigorously comprehensive data collection known as the third Integrated Household Survey, (IHS3) 2012. In this round of data collection, NSO collected a wide range of household characteristics which include among others, household expenditure patterns, welfare measures like food expenditures, housing, health and also education levels for household members among other things. The IHS 3 and the other IHS rounds together with yearly Malawi Welfare Monitoring surveys (WMS), presents the study with a huge data set which the study utilises to analyse the channels of poverty reduction at district level in Malawi.

Section 5.2 that follows presents a back ground as a basis for the model hence makes reference to other methodologies and models in the literature that have looked at poverty reduction and determinants of poverty reduction and how changes in poverty levels happen over time. Then section 5.3 lays out a detailed step by step process of the model building for the model that has been used in the analysis in chapter six of this study.

5.2   METHODOLOGIES IN MEASURING POVERTY REDUCTION

The relationship between economic growth and poverty reduction is a well known area of research in economics. A number of studies (Dollar and Kraay, 2000:1; 2001:2) Hossein and Weiss (2002:250), Mukherjee and Benson (2003:339) have adopted a regression method with a measure of poverty as a dependent variable. In their study on determinants of consumption as a measure of poverty in Malawi, Mukherjee and Benson (2003:340) based their modelling of poverty on the natural logarithm of total daily per capita consumption of the survey household. They specified it as follows;

$$lnc_j = \beta x_j + \mu \; ... \qquad (5.1)$$

Where c_j is the total daily per capita consumption of household j in real Malawi kwacha x_j is a set of exogenous determinants and μ is a random error term Mukherjee and Benson (2003:341). The determinants that Mukherjee and Benson used include a number of household demographics like head of household, gender, education level, household size among other aspects. They also looked at employment status, type of occupation agriculture aspects, access to utilities and other community variables. This formulation was also used by Datt *et al.*, (2000:4). Their study used cross-sectional data on households.

Klasen and Misselhorn (2008:7) went further with the relationship between growth and poverty reduction and argued that there are distributional changes as well happing as poverty levels change. They argued that any change in headcount poverty can be decomposed into a) a "growth effect" that is the result of a proportional change in all incomes that leaves the distribution of relative incomes unaffected and b) a "distributional effect" that is only due to a change in the distribution of relative incomes leaving the mean income constant (Klasen & Misselhorn, 2008:7). These two effects are shown in Fig 5.1 below

FIGURE 5.1: GROWTH AND DISTRIBUTION EFFECT

Figure 1
Decomposition of change in distribution and poverty into growth and distributional effects
Source: Bourguignon (2003).
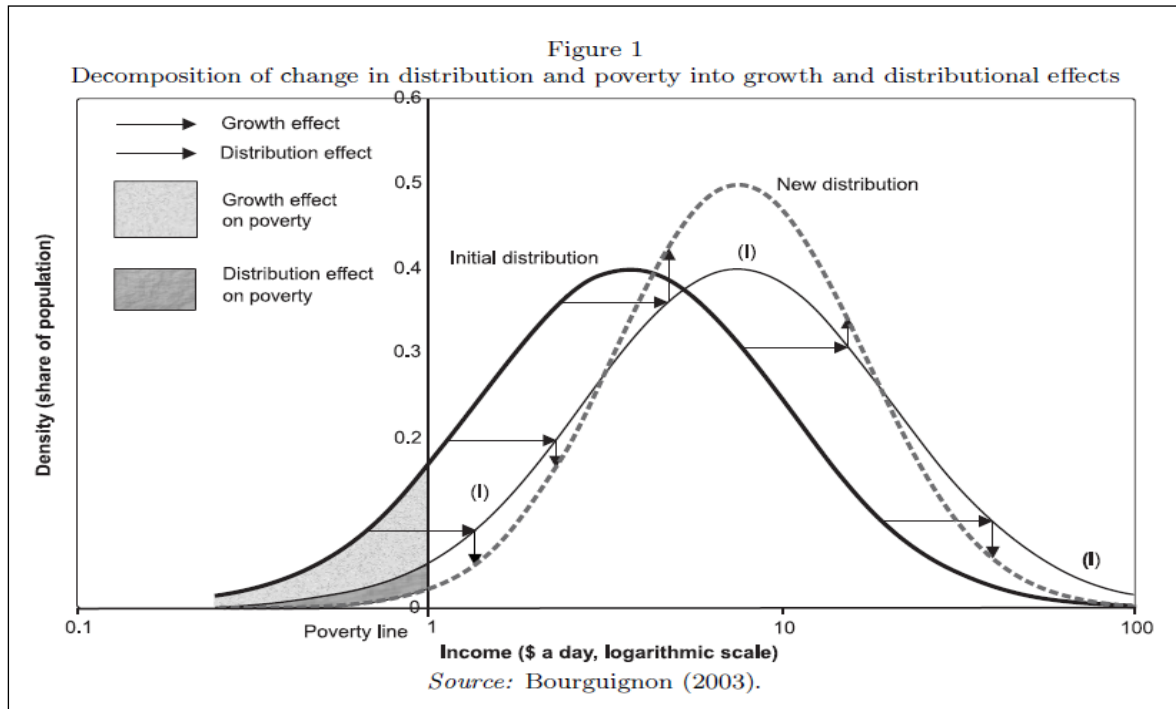
And they stated that the change in the head count poverty can be explained by the following identity;

$$\Delta H = H_{t'} - H_t = \left[\widetilde{F}_t \left(\frac{z}{\bar{y}_{t'}} \right) - F_t \left(\frac{z}{\bar{y}_{t'}} \right) \right] + \left[\widetilde{F}_t \left(\frac{z}{\bar{y}_{t'}} \right) - F_t \left(\frac{z}{\bar{y}_{t'}} \right) \right] \quad \dots (5.2)$$

Where H_t is the headcount poverty measure and $F(z/y_t)$ refers to the cumulative distribution function of the actual income distribution. The first part is the growth effect and the second part is the distribution effect (Klasen & Misselhorn, 2008:7). The formulation also has another identity when considering relative changes in headcount poverty ratio, the growth elasticity of poverty is given as follows;

$$\epsilon_y^H = \frac{\Delta H}{\Delta \log(\bar{y}) H_t} = \frac{1}{\sigma} \tau \left[\frac{\log(z/\bar{y}_t)}{\sigma} \right] + \frac{1}{2} \sigma \quad \dots (5.3)$$

Where τ is the hazard rate, which is the ratio of density function to the cumulative density function of the standard normal distribution (Klasen & Misselhorn, 2008: 8). The two identities above show the changes that growth has on both average incomes and distribution dynamics.

A well-known research by Dollar and Kraay (2000:4) looked at the impact of growth on poverty. They used the lowest quintile income group as a measure of the poor. In order to examine how incomes of the poor vary with overall incomes, they estimated variants of a regression of the logarithm of per capita income of the poor (y_p) on the logarithm of average per capita income (y) and a set of additional control variables (X): as follows;

$$Y_{ct}^p = \alpha_0 + \alpha_1 . Y_{ct} + \alpha_2 \, 'X_{ct} + \mu_c + \varepsilon_{ct} \quad ... \quad (5.4)$$

Where c and t present countries and years, respectively, is $\mu_c + \varepsilon_{ct}$ a composite error term including unobserved country effects X_{ct} are control variables. They pointed out that since incomes of the poor are equal to the first quintile share multiplied by average income divided by 0.2, it is clear that Equation (5.4) is identical to a regression of the log of the first quintile share on average income and a set of control variables:

$$\ln\left(\frac{Q1_{ct}}{0.2}\right) = \alpha_0 + (\alpha_1 - 1) * Y_{ct} + \alpha_2 \, 'X_{ct} + \mu_{ct} + \varepsilon_{ct} \quad ... \quad (5.5)$$

Moreover, since empirically the log of the first quintile share is almost exactly a linear function of the Gini coefficient, Equation (5.4) is almost equivalent to a regression of a negative constant times the Gini coefficient on average income and a set of control variables, (Dollar & Kraay, 2002:9). Dollar and Kraay used panel data from 92 countries. This presents a better model to be adopted in this study. However the difference is in the measure of poverty, instead of using the per capita incomes of the lowest income quintile, this study will use a district head count of poverty. Dollar and Kraay argued that a simple OLS regression on equation 5.4 would not be an appropriate one, the reasons being measurement error in average incomes of other control variables. In their study they concentrated on α_1 in equation 5.4 which measured elasticity of incomes of the poor to changes in the mean income, where a value on $\alpha_1 = 1$ meant that a growth in per capita income is translated one –for-one into growth in income of the poor (Dollar & Kraay, 2004:10)

Another study that used the mean income of the poorest 20 percent and 40 percent in a similar formulation like Dollar and Kraay to measure the impact of growth on poverty is a study by Romer and Gugerty (1997:1) The used an OLS regression to estimate changes in income of the poorest 20 percent and 40 percent being regressed on growth of GDP and openness of the economy (Roemer & Gugerty, 1997:14).

Most studies have used panel data on countries for a number of years. For example, Bourguignon, (2004) and Chen and Ravallion, (2001). The common measures of poverty available for most countries are the mean income of the poorest 20 percent and the head count index which has been discussed in detail in chapter three above. This study will use the head count index as the primary measure of poverty in Malawi for all the districts.

5.3   EXPLAINING PANEL DATA

This study utilises panel data as will be discussed in detail in section 5.5 of this chapter. There are other names for panel data, such as pooled data which according to Gujarati (2004:637) is the pooling of time series and cross-sectional observations to together or combination of time series and cross-section data, longitudinal data is a study over time of a variable or group of subjects, event history analysis e.g., studying the movement over time of subjects through successive states or conditions, cohort analysis (Gujarati, 2004: 637)

Panel data are repeated measures of one or more variables on one or more persons (repeated cross-sectional time-series). Mostly they come from panel surveys. However, you can get them also from cross-sectional surveys by retrospective questions. Panel data record "snapshots" from the life course (continuous or discrete dependent variable). Insofar they are less informative than event-history data panel data are of the following form;

The main reason why panel data is used is that, we are interested in describing change over time. That is to see what has been happening to social change, e.g.

changing attitudes, behaviours, social relationships, income distribution, peoples welfare or poverty levels. To understand individual growth or development, e.g. life-course studies, child development, career trajectories, school achievement, inflation levels, exchange rate changes, economic growth and any other such aspects that change after a passage of time need to be considered.

There are a number of advantages accorded to panel data. First, since panel data relate to individuals, firms, districts in the case of this study, countries, etc., over time, there is bound to be heterogeneity in these units. The techniques of panel data estimation can take such heterogeneity explicitly into account by allowing for individual-specific variables, as we shall show shortly. We use the term individual in a generic sense to include micro-units such as individuals, firms, states, and countries. also by combining time series of cross-section observations, panel data so collected or assembled give more informative data set, more variability, less collinearity among variables, also more degrees of freedom and more efficiency. (Baltagi, 2008:3)

Other advantages include but limited to the following, according Gujarati (2004:638) and Baltagi (2008:3); by studying the repeated cross section of observations, panel data are better suited to study the dynamics of change. Spells of unemployment, job turnover, and labour mobility are better studied with panel data. Panel data can better detect and measure effects that simply cannot be observed in pure cross-section or pure time series data. Panel data enables us to study more complicated behavioural models. For example, phenomena such as economies of scale and technological change can be better handled by panel data than by pure cross-section or pure time series data. By making data available for several thousand units, panel data can minimize the bias that might result if we aggregate individuals or firms into broad aggregates. Basically, panel data can enrich empirical analysis in ways that may not be possible if only cross-section or time series data are used. (Gujarati, 2004:638)

Bruderl (2005:1) pointed out about panel data that, they are repeated measures of one or more variables on one or more persons (repeated cross-sectional time-

series). Mostly they come from panel surveys; however, you can get them also from cross-sectional surveys by retrospective questions. Panel data record "snapshots" from the life course (continuous or discrete dependent variable). Insofar they are less informative than event-history data (Bruderl, 2005:1)

5.4   MODEL SPECIFICATION

The models to be specified are used on the objectives that are analysed by regression. Objective one does not use a regression but trends and a t test as specified in the next section.

5.4.1 Modelling for first objective

The first empirical objective will be addressed using trends, descriptive and graphs and a t test to find out if the differences that exist in the poverty rates are statistically significant. Statistically the null hypothesis is set in the negative that there has been no poverty reduction in the last two decades. The null hypothesis is set in the negative as is statistically custom the following will be the hypothesis to be tested statistically

H_0 = poverty rate has not changed in the past two decades.

H_1 = poverty rate has changed over the last two decades

Using data on IHS 1, IHS 2 and IHS 3 we test three time periods of poverty scenarios and use a t test to for mean difference in the district poverty rates. The hypothesis for the three IHS periods can be set as follows where H_0 stands for the null hypothesis and H_1 represent the alternative hypothesis

First hypothesis

H_0 = there is no statistical difference between district poverty rate for IHS1 and IHS2

Meaning H_0: Means poverty rate for IHS 1 = Mean poverty rate for IHS 2

H_1 = Mean poverty rate for IHS 1 = mean poverty rate for IHS 2

To answer this question, we simply run an independent t test for the means and the result are tested for significance; in this case we test the mean difference of the two samples at a 95 percent confidence interval

Second hypothesis

H_0 = there is no statistical difference between district poverty rate for IHS2 and IHS3

H1 = Otherwise

Third hypothesis

H_0 = there is no statistical difference between district poverty rate for IHS1 and IHS3

H1 = Otherwise

5.4.2 Modelling for second to sixth objective

As explained in the section above objectives that use a regression analysis method are second to the sixth one. The regressions to be considered follow the formulation by Dollar and Kraay as specified in equation 5.4 above only adapted to the variables used in this study. The basis for the regression emanates from specifications that are consistent with panel data as explained step by step below. The regression estimation can be done using a fixed effects model or a random effects model. Below the two options are explained.

5.4.2.1 Fixed effects regression models (FEM)

With the district poverty rate (DPR) as the dependent variable, and the factors pointed out in the objectives above as independent variables. To capture the effects and the elasticity properly, individual regressions for each expected channel (education, agricultural production, access too loans, etc.) will be run separately against the district poverty line. The standard regression will be as follows;

$$DPR_{it} = \beta_1 + \sum_{j=2}^{k} \beta_j X_{jit} + u_{it} \ .. \qquad (5.6)$$

$$i = 1, 2, 3 \ldots N \text{ (districts)}$$

$$t = 1, 2, 3 \ldots T \text{ (years)}$$

Where i stands for the i-th cross-sectional unit and t for the t time period. DPR is the district poverty rate. β_1 is the intercept and $\beta_{2\ldots n}$ are the slope coefficients.

Estimation of equation 5.6 depends on the assumptions made about the intercept, the slope coefficients, and the error term u_{it}. There are several possibilities: first possibility is the assumption that the intercept and slope coefficients are constant across time and space and the error term captures differences over time and individuals in this case districts. In this case the regression is run with all the observations pooled together, as an OLS and equation 5.6 looks as it is.

Second assumption that can be made is that, the slope coefficients are constant but the intercept varies over districts. In this case, the intercept β_1 changes to include the varying intercepts for different districts. The new intercept becomes β_{1i} and the equation looks as below;

$$DPR_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + \cdots + u_{it} \ldots \quad (5.7)$$

The i on the intercept β_{1i} is to indicate the varying intercept across districts, this can be done by using a dummy for the intercept of each district, which means for the 26 districts, 25 dummy variables will be entered in equation (5.7) and the result is in equation (5.8) below;

$$DPR_{it} = \alpha_1 + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \alpha_4 D_{4i} + \cdots \quad \alpha_{25} D_{25i} + \beta_2 X_{2it} + \beta_3 X_{3it} + \cdots + u_{it} \ldots$$
$$(5.8)$$

Where D_2 is the dummy for intercept of district 2 where $D_2 = 1$ is for district 2 intercept and $D_2 = 0$ other wise. And $D_3 = 1$ is intercept for district 3 and $D_3 = 0$ other wise. That will apply for all the 25 district and the first district is the base as is done with dummy variable specification. Hence α_1 is the intercept for district 1. This is also known as the least squires' dummy variable (LSDV) model (Gujarati, 2004:642).

The third assumption is where the slope coefficients are constant but the intercept varies over districts and time, and the fourth assumption is where all coefficients (the intercept as well as slope coefficients) vary over districts. The intercept as well as slope coefficients vary over districts and time (Gujarati, 2004:640). The regression that has both intercept and slope varying over time across districts has dummies fro for each district at each point in time. The equation would be as below;

$$DPR_{it} = \alpha_1 + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \alpha_4 D_{4i} + \cdots \beta_2 X_{2it} + \beta_3 X_{3it} + \cdots \gamma_1(D_{2i}X_{2it}) + \gamma_2(D_{2i}X_{3it}) + \gamma_3(D_{3i}X_{2it}) + \gamma_4(D_{3i}X_{3it}) + \gamma_5(D_{4i}X_{2it}) + \gamma_6(D_{4i}X_{3it}) + \cdots \mu_{it} \ \ \dots \ (5.9)$$

This will be a very long equation since according to the principle of dummy variables we have to include dummies for interaction between the variables (Gujarati, 2004:945)

5.4.2.2 Random Effects Model (REM) or Error Components Model (ECM)

The study will consider all the regressions specified in section 5.3 above on all the models that will be run using the data. In addition, a random effects model will also be estimated. The weakness in the FEM is that degrees of freedom are lost by including too many dummy variables. an easy way is to account for the differences in the intercepts by putting them in the error term. The random effects model takes that into account. it has a composite of the error term from the individual districts and the one from the model. The intercept used therefore is the mean of all the district intercepts, and the individual errors are a representation of the diversion of the district intercept from the mean intercept. so the REM also known as the ECM is of the following form;

$$DPR_{it} = \beta_{1t} + \beta_2 X_{2it} + \beta_3 X_{3it} + u_{it} \ \dots \quad\quad (5.10)$$

Instead of treating β_{1i} as fixed, it is assumed that it is a random variable with a mean value of β_1 without the subscript i. And the intercept value for an individual district can be expressed as;

$$\beta_{1i} = \beta_1 + \varepsilon_i \ \ \text{i} = 1, 2\dots \text{N} \ \dots\dots \quad\quad (5.11)$$

Where ε_i is a random error term with a mean value of zero and variance of σ_ε^2 . so equation 4 then becomes ;

$$DPR_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_i + u_{it} \quad \dots \ (5.12)$$

$$\varepsilon_i + u_{it} = w_{it} \quad \text{There fore}$$

$$DPR_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + w_{it}$$

Where, w_{it} is the composite error term, the composite error term w_{it} consists of two components, ε_i, which is the cross-section, or individual district -specific, error component, and u_{it}, which is the combined time series and cross-section error component.

$$DPR_{it} = \beta_1 + \beta_2 X_{2it} + \dots \ \beta_n X_{nit} + \mu_{it} \ \dots \ (5.13)$$

Where DRP is district poverty rate (head count measure), β_1 is the model intercept and $\beta_{2\dots n}$ are coefficients of independent variables X $_{2\dots n}$. μ_{it} is the error term of the model. The subscript i is the cross-sectional component and the t is for the time series component.

The regression for objectives 2 to 6 will have all the variables of interest included as follows;

$$DPR_{it} = \beta 1 + \beta 2 Educ_{it} + \beta 3 Agri_{it} + \beta 4 \, Entr_{it} + \beta 5 \, Popgr_{it} + \beta 6 \, Employ_{it} + w_{it} \quad \dots \ (5.14)$$

Where Educ is education level at district level, Agri is agricultural production at district level, Entr is enterprises at district level, Popgr is population growth at district level and Emply is employment rate at district level. An objective specific regression will be the next step for each of the objectives 2 to 6. For example objective number three with education as a channel of impact a regression with education levels will be specified as follows

$$DPRit = \beta 1 + \beta 2 \, prim \ it + \beta 3 \, Sec \ it + \beta 4 \, Trtt + \beta 5 DR + w_{it} \ \dots \ (5.15)$$

Where prim is the percentage of those with primary education, Sec is the percentage of those with secondary education and Trt is the percentage of these with tertiary education all at district level. DR is a dummy variable for region, for the three regions in the country.

For objective 7 two regressions will be estimated with the first one having the dependent variable as district poverty rate from the head count measure and the second regression will have district ultra-poverty rate as a dependent variable as follows;

$$DPR_{it} = \beta_1 + \beta_2 X_{2it} + \ldots \beta_N X_{Nit} + \mu_{it} \ \ldots (5.16)$$

$$Ultra - DPR_{it} = \beta_1 + \beta_2 X_{2it} + \ldots \beta_N X_{Nit} + \mu_{it} \ \ldots (5.17)$$

Where DPR is the district head count poverty rate and Ultra- DPR is the district ultra-poverty rate. X_i is a vector of dependent variables which will include all the variables considered important from regression for objectives 2 to 6. The aim of objective 7 is to find out if these measures respond differently to the channels of poverty reduction. Due to the fact that panel data will be used, the Ordinary Least Squares (OLS) regression analysis becomes inadequate; hence the fixed effects and the random effects models are employed in the regression analysis.

5.5 Diagnostic tests of the model

Before a regression is run on panel data there are a number of assumptions that are made about the relationship between the dependent variable and the independent variables. In order to ascertain if the assumptions made about the variables and the error term hold so that the model is not spurious a number of tests are done on the variables.

first we assume that there is a linear relationship between the dependent variable, district poverty rate in this case and the independent variables, education, employment, access to credit and loans, agricultural production and population growth at district level in this case, thus to enable us to specify a linear regression

model. The study also makes several assumptions about the error term the most important one being that the residuals are normally distributed. Some of the important tests are the Chow test and the Hausman test as discussed below.

5.5.1 The Chow test and the Hausman Test

Before pooling data together as is done in panel data analysis, there is need to ascertain that the data is poolable (Baltagi, 2008:307). This test determines if the variables concerned in the study can be pooled. According to Baltagi (2008:307), this hypothesis is also known as the stability of the regression equation across districts in this case. He states that it can be formulated as an unrestricted model which involves a separate regression equation for each district. Another very important test is the Hausman test, this looks at the critical assumption in the error components regression model which is that $E(u_{it} / X_{it}) = 0$, this is critical and very important given the disturbances contain individual effects ($^{u}_i$ s), which are unobserved and may be correlated with the X_{it} s also according to Baltagi (2008:310)

5.5.2 The Breusch-Pagan Test

This test was developed by Breusch and Pagan (1980), it is a Lagrange Multiplier test, which tests the null hypothesis that $\sigma^2_u = 0$, the test statistic is given by the following equation;

$$ LM = \left(\frac{NT}{2} (T-1) \right) \left[\left(\sum_{i=1}^{N} e_i^2 \Big/ \sum_{t=1}^{T} e_{it}^2 \right) - 1 \right]^2 $$

Where e_{it} denotes the OLS residuals on the pooled model, e_i denote their sum over t, respectively, and the test is concluded by looking the LM test statistic to reject or accept the null hypothesis. The study uses this test to decide on the choice between random effect and fixed effects modelling.

5.6 Data and descriptives of the head count poverty measure used in the study

Data used in this study was collected by National statistics office over a number of years. Since 1990 NSO has been collecting data on different aspects of household.

The first of the series was a survey called the Household Expenditure and Small Scale Economic Activities (HESSEA), conducted in 1990 (NSO 20012:1). After this round of data collection, there followed surveys which were called integrated household surveys (IHS) and the first Integrated Household Survey (IHS1) was conducted in 1997/98; and the second Integrated Household Survey was conducted in 2004/5. The Integrated Household Surveys are large-scale multi-topic surveys done over a period of twelve months. In between the IHSs data was tracked by other surveys called Welfare Monitoring Survey. Such a survey was introduced in 2002 and was referred to as the Core Welfare Indicators Questionnaire (CWIQ) which was later adapted and renamed the Welfare Monitoring Survey (WMS) and has so far been conducted from 2005 to 2009 (NSO, 2012, p. 1)

The format in the data collection by NSO under IHS is the same and hence a detailed presentation will only be on IHS 3. Although a special note will be made on IHS1 due to some changes that were made in the calculation of the poverty line. Integrated Household Survey 3 (IHS3) was conducted by the National Statistical Office (NSO) from March 2010 to March 2011. The Survey is a nationally representative sample survey designed to provide information on the various aspects of household welfare in Malawi. The survey collected information from a sample of 12,288 households statistically designed to be representative at both national, district, urban and rural levels (NSO 2012: 2).

5.6.1 Poverty Data

In deciding on the poverty measure and hence the head count in the IHS2 and IHS3, NSO used a poverty line threshold. The poverty line was a subsistence minimum expressed in Malawi Kwacha based on the cost-of-basic-needs methodology. It was comprised of two parts: minimum food expenditure based on the food requirements of an individual and critical non-food consumption. Food needs were tied to the recommended daily calorie requirement. Non-food needs were estimated based on the expenditure patterns of households whose total expenditure was close to the minimum food expenditure. Using this method, a poverty line was developed for the country. Individuals who reside in households with consumption lower than the

poverty line were then labelled "poor". Using the minimum food expenditure as an additional measure, we can identify the "ultra-poor", households whose total consumption per capita on food and non-food items is lower than the minimum food expenditure (NSO, 2005). The poverty lines for IHS2 were as in table 5.1 below

TABLE 5.1: POVERTY LINE FOR IHS2 2004/5

	Poverty line in MK per person per year
Poor	MK16,165
Ultra poor	MK10, 029

Source: NSO, (2012:204)

The Poverty data for 2011 is as was specified in the IHS3 report. Poverty was derived from a defined poverty line. In the IHS3 it was explained that, given that one of the main objectives of their analysis was to provide comparable figures with those from the IHS2, the poverty analysis over time required a constant real poverty line. Estimating new poverty lines with the IHS3 could not guarantee that the standard of living implied by these poverty lines was the same as that from the IHS2. Thus the IHS3 analysis used poverty lines from the IHS2 updated to IHS3 prices in order to reflect the higher cost of living (NSO, Integrated Household Survey 3 (IHS 3), 2012: 204). Table 5.2 shows the poverty lines used in the IHS3 analysis to identify the poor and ultra-poor in Malawi. The population that has total consumption below MK37002 was deemed poor and the population with total consumption less than MK22, 956 was considered ultra-poor.

TABLE 5.2: POVERTY LINE FOR MALAWI IN MK

	IHS2 (2004)	IHS 3 (2012)
Food	10,029	22,956
Non Food	6,136	14,045
Total	16,165	37,002
Ultra poverty		22,956

Source: IHS 3 calculations

Using these poverty lines, we have poverty rates for all the years from 2004 to 2011 with adjustments taking place in the years and the data so collected in the years in between by the welfare monitoring surveys.

The calculation of the poverty line in IHS1 was the same with the other two surveys only with minor differences in the poverty line for different districts and regions. in IHS1 it was taken into account that prices in the country differ in regions and districts. Just like the cost of food is different in different countries and the purchasing power parity needs to be taken into account if comparison is to be made on the basis of consumption monetised. in IHS 1 poverty lines were constructed for four separate areas, Southern Rural, central Rural, Northern rural and urban areas (NSO, 1998:8).

The different poverty line areas were established so that the poverty lines in each would reflect any differences in the consumption preferences of the poorer households in their populations. And also any possible differences in the demographic make-up of their poorer households, and price differences between the areas. As will be seen, the differences between the three rural poverty line areas are not that great, whereas there are strong differences on these criteria between the Urban poverty line area and the others The poverty lines adjusted to 1998 price indicated that the rural poverty lines were between MK 7.76 and MK 11.16 per person per day, while the urban poverty line was over twice that at MK 25.38. In July 2000 prices the publication year, the rural poverty lines were between MK 14.42 and

MK 20.74, while the urban poverty line was at MK 47.18 per person per day (NSO, 1998:8).

In order to have a better panel data set with three years of the time series span there is need to make IHS 1 comparable with IHS 2 and IHS 3. This will mean to change the poverty lines into one poverty line for the whole country as was done in the other two rounds, or change IHS2 and IHS 3 into poverty lines that are different by regions. The IHS 1 methodology makes more sense in distinguishing the poverty lines for different regions. The fact that the more recent methods simplified the calculation into one general poverty line has led to misleadingly high poverty rates in districts that were reported better off in IHS 1, a good example is Nsanje. The district is reported to be the poorest in the country in IHS 3 and yet it had the lowest poverty rate in IHS 1. This study will attempt to take into account this difference in poverty measurement before examining the impact of growth on poverty.

5.7   Conclusion of the methodology chapter

This chapter discussed the methodology and the data used in the analysis of poverty at district level in Malawi. The first section pointed out the data sources of the secondary data used. It also explained the nature of panel data and the implications of using a panel data. Section 5.2 presented a detailed modelling of the regression employed in the study. Due to the nature of the study and the data used an appropriate panel data regression model was specified. a detailed process of fixed effects regression model and random effects regression model has been presented as the options that can be used for the analysis. Usually a test is conducted before deciding on whether to use fixed effect or random effects. In this study, random effects will be preferred due to the fact that fixed effects uses dummies which in the process dead to a reduction in the degrees of freedom. And due to the fact that the sample size for the data is not very big, random effects presents a better option

CHAPTER 6   RESULTS AND DISCUSSION ON THE CHANNELS OF POVERTY REDUCTION IN MALAWI

6.1   INTRODUCTION

This chapter presents results of the empirical objectives on the study of the channels of poverty reduction in Malawi. Each study objective has been presented in its own section. Data used in the empirical objectives were collected by the national statistics office of Malawi over a number of years. The main source of data used in this analysis has been the three rounds of the integrated household surveys (IHS 1 in 1998, IHS 2 in 2004 and IHS 3 in 2012). Where other sources of data have been used, acknowledgement has been duly made. The district level analysis is on the basis that as opposed to analysing poverty at household level, the data on household was further aggregated to district level. Hence the analysis is based on district percentages, which are basically the averages of the household in the district. This is therefore a macro level analysis, since the intention is to make conclusions that can be at policy level. The conclusions are intended to be at macro level because the channels of poverty reduction under consideration can only be changed or affected at policy level. The econometric models used in the regression process to arrive at the results have been presented in chapter five.

The presentation of the results is in such a way that each objective has some descriptives at the beginning in an effort to explain why certain variables are included and not others. The results of the regression model follow where a regression has been used. A discussion making reference to the results is presented as part three of each objective section. Where necessary there are references to other studies to show where the study is in agreement or disagreement with other findings. The study had the following empirical objectives hence hypotheses that were to be tested using district data on Malawi;

1. Investigated if there has been any poverty reduction in the years 1998 to 2012 in Malawi.

2. Assessed how economic growth at district level (proxied by agricultural production) affect poverty at district level in Malawi
3. Assessed how education affect poverty reduction at district level in Malawi
4. Conducted an analysis on how employment or unemployment affect poverty reduction at district level in Malawi
5. Investigate on the effects of enterprises and access to loan on poverty reduction in Malawi
6. Investigated if different poverty measures exhibit statistically significant different responses to the channels of poverty reduction.

Each of these objectives had a corresponding research question that was to be answered. The research questions were all feeding into the overarching research question of what are the channels of poverty reduction in Malawi. In this chapter each objective has been dealt with separately using the regression models specified in chapter 5 above. The investigation on whether there has been poverty reduction in Malawi between 1998 and 2012 has relied more on the examination of trends and a t test on the mean difference between the years when an Integrated Household survey was conducted namely 1998, 2004 and 2012. The section, 6.1.1 that follows presents the descriptives of the poverty measures that are used in the study.

6.1.1 Descriptive statistics of the poverty measures

Table 6.1 presents descriptives of the dependent variables that have been used in all the regression models in all the objectives. The data used in the analysis were drawn from IHS 2 and 3. The figures in the table are the summary descriptives of the poverty measures as calculated in the head count measures by the National Statistical office of Malawi.

TABLE 6.1 DESCRIPTIVE STATISTICS OF POVERTY MEASURES

	Observations	mean	Std. Dev.	Minimum	Maximum
District poverty rate	62	52.07	16.9	7.6	81.6
Ultra poverty rate	62	23.9	12.94	2	59
Poverty gap	62	18.48	8.52	1.9	40.6
Ultra poverty gap	62	4.41	4.41	0.4	21.9

Calculations Using IHS 2 and IHS 3 data

The descriptives in 6.1 above have a mean poverty rate of 52.7 percent, which is essentially closer to the national poverty rate of 2012 of 50.7 as shown in table 6.2 The lowest rate of 7.6 is a measure for one of the urban area in the country.

The main dependent variable used in the analysis is the district poverty rate. This is arrived at from the head count of the number of people below a poverty line discussed in chapter five, section 5.6.1. The ultra-poverty rate is also a head count measure arrived at by looking at the number of people below the ultra- poverty line, which is also discussed in chapter five section 5.6.1. The poverty gap and the ultra-poverty gap are measures also to be used where the study intends to establish if different poverty measures exhibit different responses as per objective number 6 of this study.

6.2. AN ANALYSIS OF POVERTY TRENDS IN MALAWI

The research question above was asked to address the study objective of assessing whether there has been any poverty reduction in Malawi in the years concerned namely 1998 to 2012. Before looking at the channels of poverty reduction it would only make sense to establish if there has been poverty reduction first.

6.2.2 Descriptivestatistics of poverty rates in Malawi

The descriptives in this section presents a picture of the dependent variable poverty rate in the context of the regions and districts. The district level poverty rate will be

further used in the regression analysis. The country is basically divided in terms of rural and urban as shown in table 6.2 below. The segmentation can also be looked at geographically in terms of the three regions, the North, centre and South and further down into districts. Table 6.3 presents the poverty figures from the regional point of view. The National Statistics Office has been collecting data on poverty for the country for the past two decades. However the calculations of the poverty line have been changing and the data that is available for practical analysis is from 1998. Below is table 6.2 and 6.3 with poverty data aggregated on country level and regional level. For a detailed explanation of how the regions are divided in Malawi refer to section 4.3 and figure 4.3 in chapter four above.

TABLE 6.2: POVERTY RATES BETWEEN 1998 -2012

Poverty status	IHS 1 1998	IHS 2 2004	WMS 2005	WMS 2006	WMS 2007	WMS 2008	WMS 2009	IHS 3 2012
Malawi	65	52	50	45	40	40	39	50.7
Urban	54.9	25	24	25	11	13	14	17.3
Rural	66.5	55.9	53	47	44	44	43	56.6

Source: NSO WMS 2009:85 and (NSO 2012:208)

The poverty rates in figure 6.2 are aggregated on national level and expounded further to rural and urban. The data used as pointed out in chapter five above was collected by the national statistical Office of Malawi. There is a clear difference in the way the poverty rates were arrived at hence a discrepancy between the IHS rates and the Welfare Monitoring Surveys (WMS). The trend in the poverty rates changed from a downward pattern to start rising between 2009 and 2012 because the WMS mostly used estimates to arrive at the poverty rates as opposed to the IHS3 which used actual expenditures collected across the country. The poverty rates urban areas and the rural areas are clearly different in the country. There is a huge difference between 1998 and 2012 for the urban poverty rate, where in 1998 the poverty rate was 54.9 percent; in 2012 the urban poverty rate was reported to be at 17.3 percent. The change in the urban poverty rate cannot be looked at as a huge

improvement for the country as most people are in the rural areas. The population of people in the urban areas stood at 17.7 percent of the national population in 2008 according to Word bank (2008:16). The change is still a huge improvement although it has to be pointed out that two different measures of poverty were used to arrive at these figures. For the 1998 poverty rate, the urban area had a higher poverty line as compared to the rural areas. In 2012 one poverty line was used for both the urban and the rural areas. As pointed out already earlier in this study, this is a major discrepancy which makes it difficult to conduct a reliable comparison between the two poverty rates. Changing the poverty line which was used in 1998 for urban areas to make it the same as the rural areas is contestable. A better was to maintain different poverty lines for urban and rural since the cost of living is different in these areas. The 2013 inflation rate for September shows that urban inflation was much higher at 31.0 percent compared to the rural, which was at 16.9 percent. Table 6.3 presents the poverty rates from 1998 to 2012.

TABLE 6.3 POVERTY RATES BY REGION 1998 -2012

Poverty status	IHS 1 1998	IHS 2 2004	WMS 2005	WMS 2006	WMS 2007	WMS 2008	WMS 2009	IHS 3 2012
Northern Region	62.5	56	51	46	46	35	31	59.9
Central region	62.8	47	46	40	36	40	41	48.7
Southern Region	68.1	64	60	55	51	51	51	63.3

Source: NSO WMS 2009:85 and (NSO 2012:208)

The country's regions have different shares of population and hence this has implications on poverty and access to channels of poverty reduction. Education participation for example is higher in the north and is lowest in the south and poverty rates are the lowest in the North and highest in the south. Table 6.4 below presents the population figures as reported in IHS 3 according to NSO (2012:10)

TABLE 6.4 POPULATION SHARE OF THE REGIONS

Male	Female	Urban	Rural	Northern Region	Central Region	Southern Region
48.8 %	51.2%	15.2%	84.8%	11.2%	36.1%	37.6%

Source: NSO (2012:10)

The country is divided into geographical regions and districts. The districts are where the analysis is based. The division of the districts is based on the geographical areas.

To clearly demonstrate the order of government between the national governments and the districts, figure 6.1 presents the order of the government structure in Malawi. It should be noted that there are no governments of regional level, these are purely geographical demarcations.

FIGURE 6.1: THE STRUCTURE OF GOVERNMENT
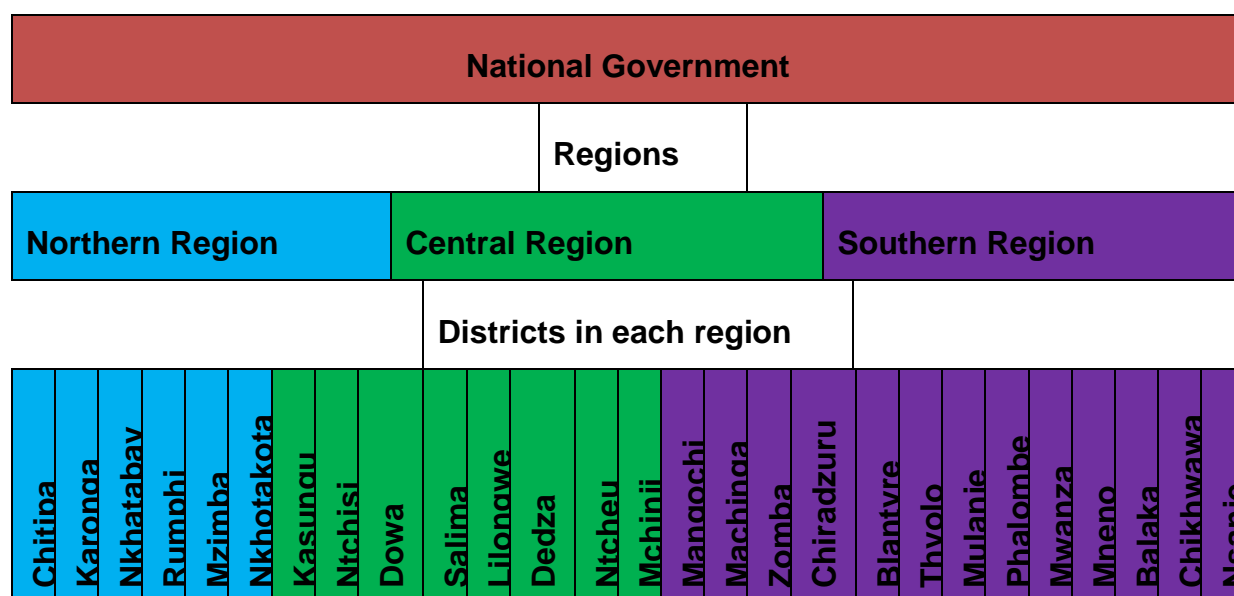
Authors design

The structure of government has been discussed in detail in chapter 4 of this study. It is however reproduced here to relate to the discussion of the poverty rates and the differences across regions and districts. As pointed out earlier, The Northern region has the lowest poverty rates and the southern region has the highest poverty rates.

There is a clear trend in the poverty rates that show a decline in the national head count over the years under study. Figure 6.2 clearly shows a declining trend except for the year 2012 where the poverty rate shoot up again due to the macro economic hardships that entangle the country beginning the year 2010.

FIGURE 6.2: NATIONAL POVERTY TREND FOR MALAWI
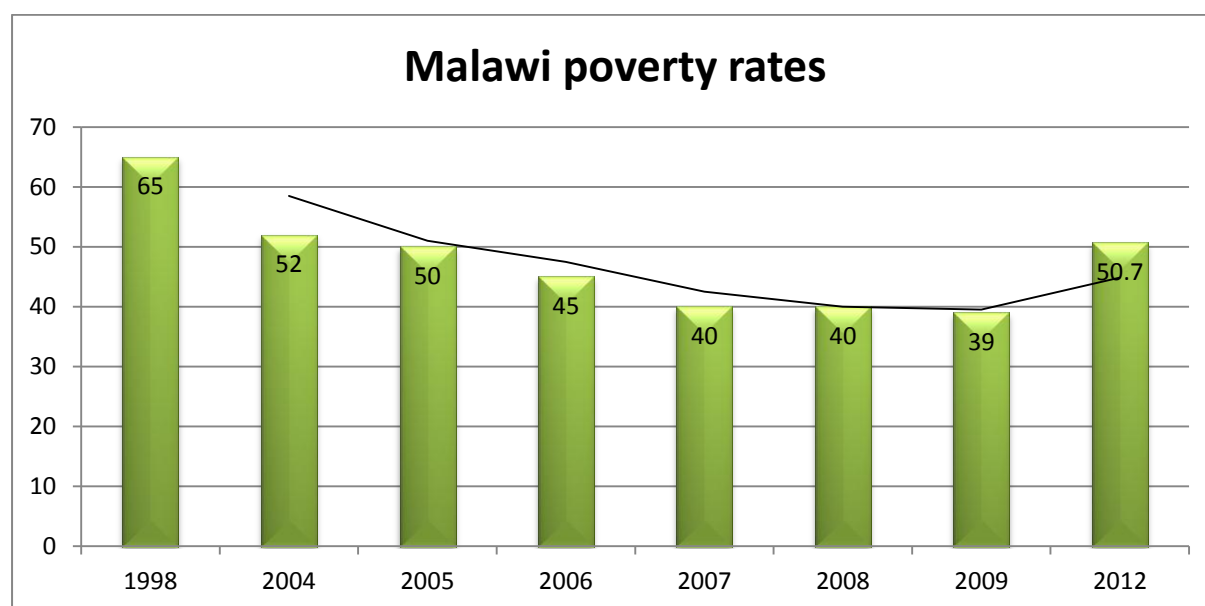
Source NSO (1998:44, 2004:144, 2012:206)

The incidences of poverty appear to be varying within the country along districts and regions. Figure 6.3 below separates the poverty rate between the rural and the urban areas, and the there is a clear difference in the rates. Only in 1998, the poverty rate was above 50 percent in the urban areas, since then the poverty rate has been very low compared to the rural areas. The distinguished difference between 1998 and the other years is mainly due to that fact that in 1998, the head count calculations had different poverty lines for the urban and the rural with the urban areas having a higher poverty line, and hence most households fell below. Starting 2004 they changed the poverty line from having different lines to a single poverty line for the whole country, which meant that most people in the urban areas were now above the poverty line. This arguably is a mis-representation of the reality as urban areas have

higher cost of living than the rural areas in terms of food and housing, hence the 1998 approach was a more appropriate one.

FIGURE 6.3: POVERTY TREND FOR RURAL AND URBAN AREAS IN MALAWI
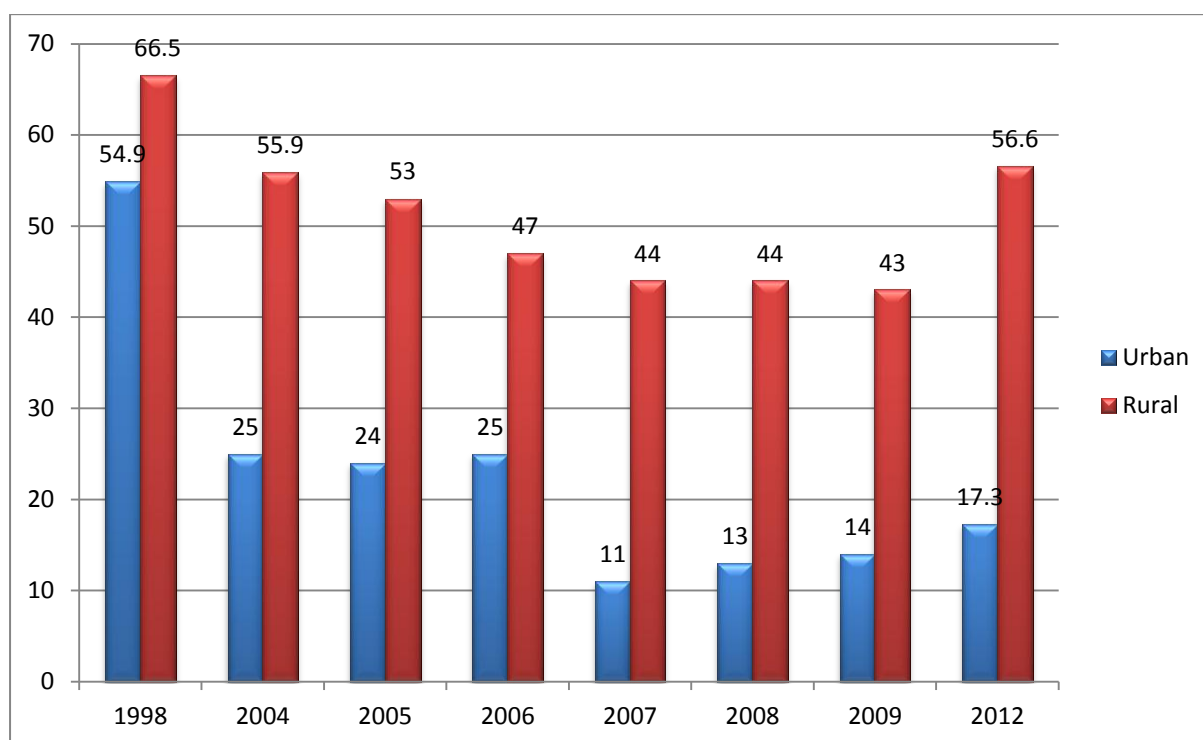
Source NSO (1998:44, 2004:144, 2012:206)

The poverty trend for the rural and the urban areas in figure 6.3 above presents a clear picture of how the changes have been over the years. The urban poverty rate for 1998 was above 50 percent due to the fact that a higher poverty line was used as has been pointed out already. However with the introduction of a uniform poverty line for both the rural and the urban areas, the urban poverty rate fell drastically to just above 20 percent in 2004. The urban poverty rate has remained below 25 percent with the lowest mark being 11 percent in 2007.

Figure 6.4 is a similar scenario to the one in figure 6.3 on this time on regions. As pointed out already in the structure of government and also shown in the map of Malawi above, the country is divided geographically into three regions. The northern region, the central region and the Southern region. The Northern region has the lowest poverty rates in some of the years, and the central region also was the lowest

in the other years. The southern region has the highest poverty rates for all the years. This could be because among other reasons, this is the most populated region of the three. In the 2012 population figures, the southern region alone was 37.6 percent of the total population and the lowest was the northern region with 11.2 percent of the total population (NSO, 2012:10)

FIGURE 6.4: POVERTY TRENDS FOR THE REGIONS IN MALAWI
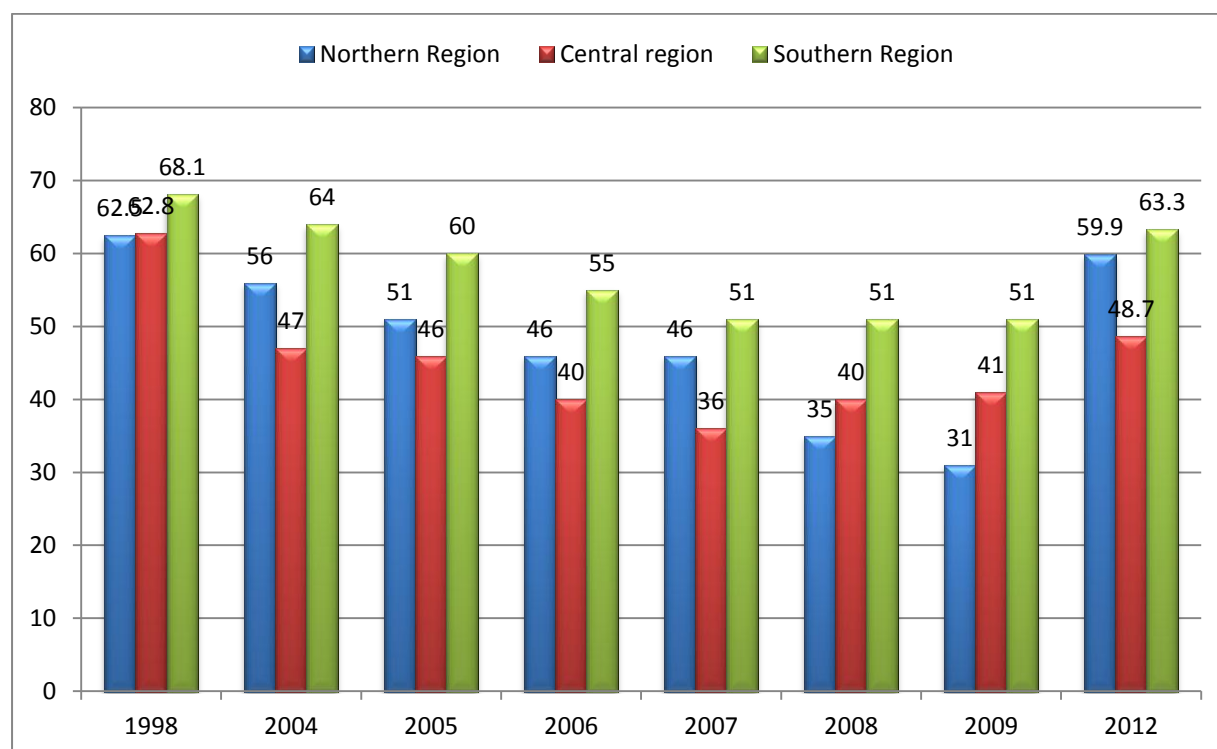
Source NSO (1998:44, 2004:144, 2012:206)

The trend in the figures above clearly shows a consistent downward movement in the poverty rates over the years in the country. however to conclude whether the changes in the poverty rates were significant the study used the figures for the IHS 2 and IHS to conduct a t-test as explained in chapter 5 above.

6.2.3   Results of the t – tests for mean difference in poverty rates

The t test was conducted to see if there was a mean difference between the district poverty rate in the years 1998, 2004 and 2012. These years are the three rounds of IHS. Using the independent t test in SPSS with the years as a grouping variable, a

test was done between 1998 and 2004, and also between 2004 and 2012. The results are reported in the tables below.

TABLE 6.5 GROUP STATISTICS FOR POVERTY RATES

Group Statistics					
	Year	N	Mean	Std. Deviation	Std. Error Mean
Poverty rate	IHS 1-1998	30	65.0633	11.38888	2.07932
	IHS 2-2004	30	53.9867	14.33654	2.61748

Author's calculation in SPSS using NSO data 1998 and 2004

The mean district poverty rate for IHS 1 which was conducted in 1998 was 65.0633 percent as is reported in table 6.5 above. The mean poverty rate for IHS 2 which was conducted in 2004 was 53.9867 percent as also reported in the table above. Thus the mean difference between the two IHS rounds is 11.07 percent. However the objective of the first hypothesis as set in section 5.4.1 of chapter 5, was to find if this difference is significant or not. The null hypothesis was set in the negative as is statistically custom the following was the hypothesis to be tested statistically

First hypothesis

H_0 = there is no statistical difference between district poverty rate for IHS1 and IHS2

Meaning H_0: Means poverty rate for HIS 1 = Mean poverty rate for IHS 2

H_1: Mean poverty rate for IHS 1 = mean poverty rate for IHS 2

The results of the empirical test of this hypothesis are presented in tables 6.2.4 below

TABLE 6.6 RESULTS OF A T-TEST BETWEEN IHS 1(1998) AND IHS 2 (2004)

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Poverty rate	Equal variances assumed	2.166	.146	3.314	58	.002	11.07667	4.38519	17.76814
	Equal variances not assumed			3.314	55.177	.002	11.07667	4.37789	17.77544

Author's calculation in SPSS using NSO data 1998 and 2004

The t-test of 3.314 is significant at 1% with a p-value of 0.002. This means that we reject the null hypothesis that the means are the same. It also means that the mean difference of 11.07667 is statistically significant. The conclusion of the test is that there was a statistically significant reduction in the mean district poverty rate between 1998 and 2004.

The difference between 2004 and 2012 which is IHS 2 and IHS 3, table 6.7 presents the mean poverty rates.

TABLE 6.7 GROUP STATISTICS FOR POVERTY RATES

	Year	N	Mean	Std. Deviation	Std. Error Mean
Poverty Rate	IHS 2- 2004	30	53.9867	14.33654	2.61748
	IHS 3 - 2012	30	49.9933	19.77110	3.60969

Author's calculation in SPSS using NSO data 2004 and 2012

The second hypothesis was set as follows;

H_0 = there is no statistical difference between district poverty rate for IHS2 and IHS3

H1 = Otherwise

The results of the t-test are reported in table 6.8

TABLE 6.8 RESULTS OF A T-TEST BETWEEN IHS 1(1998) AND IHS 2 (2004)

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Poverty rate	Equal variances assumed	.896	58	.896	58	.374	3.99333	-4.9319	12.91864
	Equal variances not assumed			.896	52.891	.375	3.99333	-4.9503	12.93703

Author's calculation in SPSS using NSO data 2004 and 2012

The mean difference between IHS 2 and IHS is 3.99333 and it is not significant according to the t-test with a t statistic of .896 and a p-value of .374 which means we accept the null hypothesis that there is no statistically significant difference in the mean of the two IHS rounds. This however is expected due to the fact that the year 2012 saw an increase in the national poverty rates, and this is also reflected in the district poverty rates.

The third hypothesis under objective 1 was set as follows;

H_0 = there is no statistical difference between district poverty rate for IHS1 and IHS3

H1 = Otherwise

The district poverty rates tested for hypothesis 3 are reported in table 6.9 below. The rationale behind hypothesis number three is to check if the changes in poverty rates in IHS 3 went below the 2004. The fact the hypothesis number 2 was found not significant necessitated the test for the mean difference between IHS 1 and IHS 3

TABLE 6.9 GROUP STATISTICS FOR POVERTY RATES

	Year	N	Mean	Std. Deviation	Std. Error Mean
Group Statistics					
Poverty rate	1998- IHS 1	30	65.0633	11.38888	2.07932
	2012- IHS 3	30	49.9933	19.77110	3.60969

Author's calculation in SPSS using NSO data 1998 and 2012

The mean difference between the poverty rates for IHS 1 and IHS 3 was 15.070, and the t-test to see if this difference is statistically different from zero is reported in table 6.10 below.

TABLE 6.10 RESULTS OF A T-TEST BETWEEN IHS 1(1998) AND IHS 2 (2012)

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference		Lower	Upper
Poverty rate	Equal variances assumed	11.090	.002	3.618	58	.001***	15.07000		6.73135	23.40865
	Equal variances not assumed			3.618	46.337	.001***	15.07000		6.68643	23.45357

Author's calculation in SPSS using NSO data 1998 and 2012 (****significant at 1%*)

The results of the t-test show that a t statistic of 3.618 with a p-value of .001 is statistically significant at 1% significance level.

The conclusion of the empirical results is therefore that, there has been a poverty reduction at district level as captured by a statistically significant reduction in the average measure of the district poverty rates. The study found a mean difference of 15.07 in district poverty rates between 1998 and 2012. This conclusion therefore justifies the further analysis that have been done in the sections to follow, which are

basically looking at the channels through which poverty reduction is unleashed at district level in the country.

6.3. THE RELATIONSHIP BETWEEN AGRICULTURAL PRODUCTION AND POVERTY REDUCTION IN MALAWI

There is a strategic relationship between agricultural production and poverty in Malawi like in most developing countries. This is the case because the bulk of the economy's output is dependent on the agriculture sector (GoM, 2010:16). In this study where an attempt is being made to link economic growth to poverty, and in the absence of economic growth data at district level, agricultural production presents a better proxy. The relationship between economic growth and poverty has been discussed extensively in chapter 2 of this study. However, data on economic growth is only available at national level and not on district level in Malawi. This has necessitated the use of agricultural production as proxy for economic growth at district (Chirwa, *et al.* 2008:1). In their study Chirwa *et al.* (2008:1) pointed out that the agricultural sector accounted for 39 percent of the gross domestic product in their findings and 85 percent of the labour force was in agriculture. It also generated 83 percent of foreign exchange earnings for the country.

There is therefore enough evidence to show that Malawi as a country relies on agriculture, majority of households have their livelihoods in agriculture (Mukherjee & Benson, 2003:339; NSO, 2012:130). To further agree with the sentiments by Chirwa (2008) a more recent study by National Statistical office in 2012 found that in about 85 percent of households in Malawi were engaged in agricultural activities, and mostly maize production. Out of the 85 percent that were engaged in agriculture, about 84 percent of the households were engaged in crop production whilst 44 percent reared livestock (NSO 2012:130). Table 6.11 presents the trend of agricultural production as a share of the nations GDP.

TABLE 6.11 TRENDS IN AGRICULTURAL SHARE OF THE ECONOMY

Indicator	1970-79	1980-84	1985-89	1990-94	1995-99	2000-05
Share of agricultural GDP	39.63	37.23	35.88	33.36	38.60	38.49
Share of total employment	39.84	48.79	45.88	49.96	69.17	Above 70

Source: Chirwa et al. (2008:11)

It is therefore safe to associate or proxy economic activity to agricultural activities in this context. The section that follows discusses the variables that are considered important in linking poverty reduction to agricultural production.

TABLE 6.12 DESCRIPTIVE STATISTICS OF VARIABLES IN THE AGRICULTURAL MODEL

Variable	Obs.	Mean	Std. Dev.	Min	Max
Hectare	62	35762.48	42043.24	1437	210726
Local maize production	62	21722.50	25003.86	1295	132135
Input Subsidy	62	6285.172	4316.74	324.1	17712.75
Beneficiary	62	77698.93	54050.13	6554	265939
Maize price	62	26.51	5.243	39.75	
Literacy rate	62	66.94	14.02	34.1	93.1

Calculation in STATA using IHS 2 and 3 data

Table 6.12 presents the descriptive statistics of the variables in the agricultural sector that are crucial in determining the relationship with poverty reduction and .These variables are chosen due to their association with agricultural production in Malawi.

6.3.2 A discussion of the variables under agricultural production model

This section discusses the justification in the choice of the variables used in the analysis of the relationship between poverty reduction and agricultural production in Malawi. The variables to be discussed include land holding, the input subsidy program, and maize production as per the descriptive statistics in table 6.3.2 above.

6.3.2. 1 Land holding (Hectares)

One of the most important factors associated with agricultural production is the availability of land. Hence land available to maize production is considered as an important factor in the model. A study by Chirwa (2004) found the link between poverty reduction and land holding to be very crucial. He reported that the study revealed that agricultural policies hitherto had favoured large scale farmers at the peril of small holder farmers who accounted for 80 percent of the households in the country. One of the main reasons or constraints that small holder farmers faced was landlessness and small land holding, (Chirwa, 2004:1) Another study by Mukherjee and Benson (2003) reported that per capita consumption increased 13 – 17 percent in response to increased cultivated area in Malawi, (Mukherjee & Benson, 2003: 352). According to the data as reported in table 6.12 above on average, 35762.48 hectors are under maize cultivation per district in Malawi. There is also a clear indication that the distribution of land is varied in the districts. The maximum land under maize cultivation is 210726 hectors and the minimum is 1437 giving a range of 209289 hectors, which is an indication of very high disparities between the districts.

6.3.2.2   Local maize production

In Malawi food security for the nation is basically understood in the light of access to maize (Chirwa, 2008:13). Figure 6.3.1 below shows the major food crops in Malawi.

FIGURE 6.5: MALAWI'S MAJOR FOOD CROPS
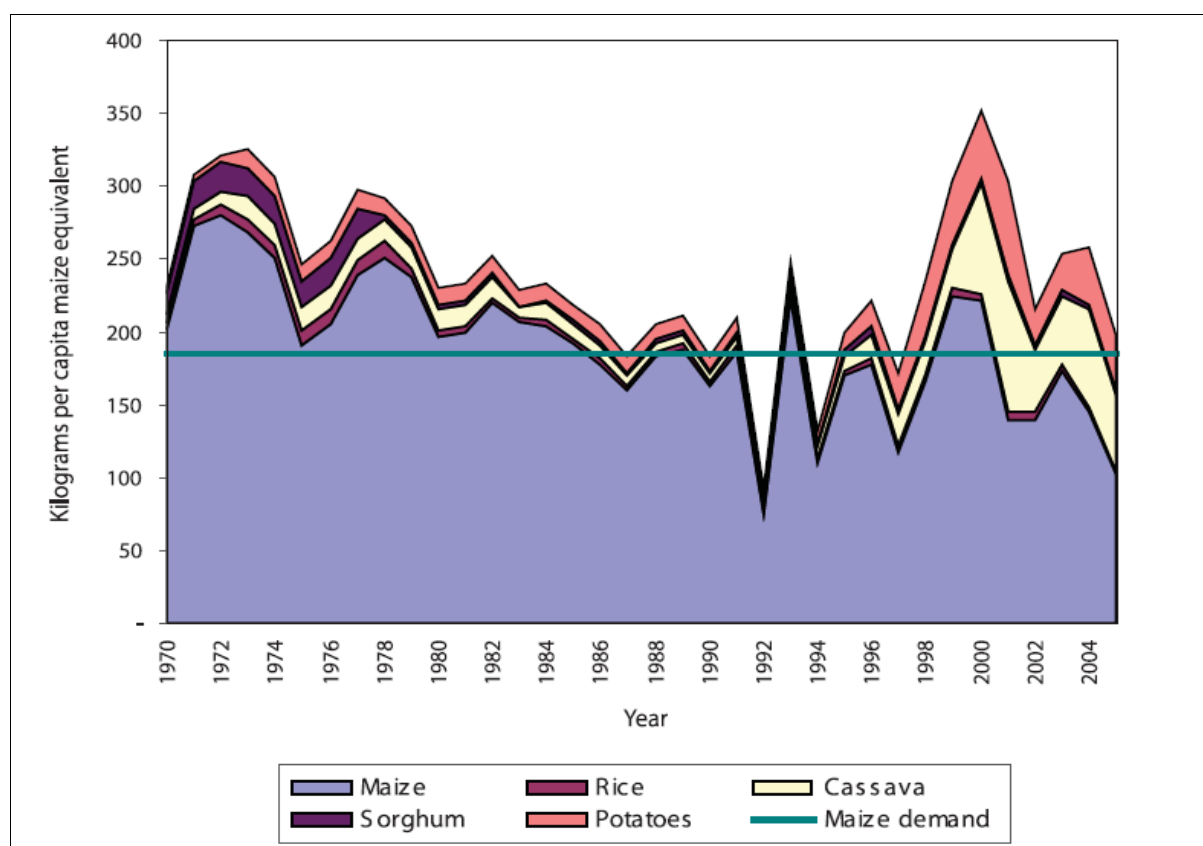
Source: Chirwa *et al.,* (2008: 13)

There are a number of food crops grown in Malawi with the major one being maize which is cultivated in all the districts of the country. Other crops include rice, which is only grown in a few districts that have the conditions necessary for rice production, the main ones being Zomba in the South and Karonga in the Northern region. Also cassava, sorghum and potatoes are considered important food crops as is depicted in figure 6.3.1 above. Chirwa and Zakeyo (2003:1) in making an emphasis of the importance of maize stated that even if the total food production is above the minimum requirement for the country, if the production of maize is below the minimum, the nation considers itself to be food insecure that year. The same sentiments about maize are echoed in the ministry of agriculture, where they state that the country is seen to be in food crisis if the production and supply of maize falls below the minimum required levels. This can be so despite the fact that other food crops also grown in the country like rice and cassava are alternatives to maize in

some parts of the country, maize remains the main staple food for Malawians, (GoM, 2010: 12). The importance of maize is even seen by the amount of land dedicated to maize cultivation by households across the regions in the country. Table 6.13 give some indication of the importance of maize.

TABLE 6.13 SMALL HOLDER AGRICULTURE IN MALAWI IN 2004

Item	Northern region	Central Region	Southern region	Nation
Landholdings less than 0.5 ha /household (%)	12.1	15.4	25.4	19.9
Less than 1.0 ha /household (%)	31.4	40.6	54.1	46.2
Maize growers (%)	93	97	99	97
Access to credit for food crop inputs (%)	2.5	4.2	3.0	3.4
Percentage of smallholder farmers purchasing fertilizer (%)	37	44	39	41

Source: Dorward and Chirwa, 2011:2

6.3.2.3 Input Subsidy

Although there is so much attention given to agriculture, productivity remains the centre of the connection between agriculture and poverty reduction (Dorward & Chirwa, 2011:1). Looking at the percentage of small holders that purchase fertilizer in table 6.13 above, it is clear that most farmers could not afford this strategic input. In the year 2004/2005 growing season, the government introduced a subsidy on fertilizer which to a greater extent makes it possible for most poor households to use the input. The input subsidy is therefore important in explaining the changes that have happened in the agriculture sector since 2004. This is the reason the input subsidy variable is included as an independent variable in the model. The variable is measured in terms of tonnes of fertilizer received per district. The descriptives in

table 6.12 above indicate that on average 6285.172 tonnes are received per district. Although it is clear that other district benefit more as the maximum tonnage received per district is reported to be 17712.75 and the minimum is at 324.1 tonnes

6.3.2.4 The Breusch and Pagan test for the agricultural production model

The Breusch –Pagan test is used to test whether it is appropriate to use random effect or fixed effects model. The null hypothesis under the BP test is that variance is equal to zero. This assumption that variance is equal to zero means that there are no random effects and hence not appropriate to use random effects. The results of this test for the model presented in table 6.14 rejects this null hypothesis. The results produced a chi square test of 11.31 and a p- value of 0.0004, which means we reject the null hypothesis of variance equal to zero and conclude that there are random effects, and hence the use of random effects model is appropriate. The results of the BP test are reported in annex B 1.

6.3.3 Regression result and discussion on agricultural production and poverty

The model that was estimate in this objective was as follows;

$$\mathbf{DPR}_{it} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1 \mathbf{Hact}_{it} + \boldsymbol{\beta}_2 \mathbf{Maiz\ pro}_{it} + \boldsymbol{\beta}_3\ input\ sub_{it} + \boldsymbol{\beta}_4 \mathbf{beneficiary}_{it} + \boldsymbol{\beta}_5 \mathbf{Maize\ price}_{it} + \boldsymbol{\mu}_{it} \dots \quad (6.3.1)$$

Where DPR: is the district poverty rate, Hact: is for the hectares under maize cultivation Maize pro: is the district maize production measured in tonnes Input sub: is the agriculture input subsidy, which is mainly fertilizer given to farmers by the government measured in tonnes per district, Beneficiary: is the number of people in the district benefiting from the input subsidy Maize price: is the district average annual maize price

The model follows the formulation of a random effects regression model due to the panel data used as explained in section 5.4.2.1 of chapter 5 above. For a multiple regression like the one specified above there is need to check if the independent

variables are correlated to avoid the problem of Multicollinearity. The correlation matrix for the variables include in the model is presented in annex B2. Multicollinearity becomes a problem when there is perfect collinearity between two regressors. The results of the correlations show that there is no perfect collinearity between any two variables.

However before estimating model (6.3.1) first we estimate a simple regression that isolates maize production as explaining changes in poverty rates as follows;

$$DPR_{it} = \emptyset_0 + \emptyset_1 Local\ Maize\ production_{it} + \mu_{it} \ .... (6.3.2)$$

Where $\emptyset_0$ is the intercept coefficient and $\emptyset_1$ is the local maize production coefficient, showing the change on the district poverty rate as a result of a unit change in the local maize production which is measures in tonnes. μ_{it} is a stochastic error term, capturing the unexplained variation in the model.

This model is estimated due to the fact that, there are high correlations between the regressors even though there is no perfect collinearity. Although Maize production on its own cannot explain all the variation in the district poverty rate, it is important to understand whether on its own it presents a significant relationship with the expected negative sign. Table 6.14 has both regressions reported. Regression 6.3.2 below presents the results of the simple regression model and regression 6.3.1 are the results of the model with all the variables as specified in equation 6.2.1 above. The full regression results where the figures in table 6.14 are summarised from are reported in annex B3.

TABLE 6.14 RESULTS OF AGRICULTURAL PRODUCTION AND POVERTY

Regression model 6.3.2			Regression model 6.3.1	
Variable	**Coefficient**	**p-value**	**Coefficient**	**P –value**
Constant	58.881	0.000***	65.297	0.000***
Local Maize production	-0.003134	0.001***	-0.0001	0.497
Hectors			-0.000072	0.39
Input Subsidy			-0.0020	0.06*
Beneficiary of subsidy			.000	
Maize price			-0.07412	0.769
Wald chi 2	11.96	0.000***	16.48	0.0056***

Calculation using Integrated Household Survey data (significant at 1%** ,5%** 10%*)

The results of model (6.3.2) show that a one tone increase in local maize production reduces the district poverty rate by -0.0003 and it is significant even at 1percent significance level with a p- value of 0.001. The fact that there is a negative relationship between the district poverty rate and maize production confirms the apriori expectation that improvements in agricultural production can help reduce incidences of poverty in the country.

However to further investigate the relationship between poverty rate and agricultural production, the study estimates the model (6.3.1) with more independent variables that are expected to have a bearing on the relationship between agricultural production and district poverty rate.

The outcome of the model 6.3.1 is not impressive in terms of the significance of the coefficients. Only the input subsidy is significant at 10 percent significance level with a p-value of 0.06. This result is therefore leading to rejecting the null hypothesis that there is no relationship between input subsidy and poverty reduction. The conclusion of this significant coefficient is that the inputs subsidy program significantly affect

poverty rate at district level. The input subsidy is measured in tonnes received per district, which means a one tone increase in the subsidy received per district reduces poverty at district level by a 0.002. This significant result on the subsidy is in agreement with a study by Dorward and Chirwa, (2011) who also found that the subsidy led to significant increases in national maize production and productivity, and that consequently contributed to increased food availability, higher real wages and wider economic growth and poverty reduction in the country (Dorward and Chirwa; 2011:1)

Although not significant in the model, the hectors under maize cultivation and maize price have all indicated a negative relationship with the district poverty rate. This is in agreement with the apriori expectation that an increase in land cultivated should lead to a reduction in poverty. A study by Mukherjee and Benson, (2003: 352) found that an increase in cultivated land also increased per-capita consumption in Malawi. It can however be argued that the result in this study is only representing the inelasticity of land over time. Increase in land cultivation is only possible when there is land lying idle, or as Pareto principle would call it, under inefficient use of land. In cases where all the land is being used, this increase may only mean change of usage.

Maize price also has a coefficient that is not significant in as far as affecting the district poverty rate is concerned. However the negative sign means that the higher the maize price the lower the district poverty rate. The fact the result is not significant may largely point to the fact that maize prices are higher in times of shortage, and when there is shortage, it is mostly the poor that suffer as they struggle to buy. hence a significant relationship between maize price and poverty would have been worrisome in policy terms.

The Wald Chi 2 test statistic is also significant showing that the null hypothesis that all the variables in the model are equal to zero cannot be accepted. With a p-value of 0.0056, for regression 6.2.1 and 0.000 for regression 6.3.2, the models are significant at 1% significance level. Hence the model specification cannot be questioned.

The main conclusion drawn from the empirical analysis of the relationship between agricultural production and district poverty rate is that, increase in agricultural production proxied by local maize production is crucial for poverty reduction in the country. This result is in agreement to a number of studies that also found a strong relationship between agriculture and poverty reduction. A study by Cervantes-Godoy and Dewbre (2010:1) found that growth in agricultural incomes were of special importance in a twenty five country study. DFID (2004:1) also found that increase in agriculture productivity is a key to poverty reduction.

The fact that 85 percent of the labour force in the country are in agriculture implies that if incomes from agriculture increase, then 85 percent of the labour force will benefit. It is therefore clear from this result that government policies that aim at promotion of productivity would be more pro poor. Productivity become the important aspect since with all the land under usage output can only be increased if there is an advancement in productivity. Therefore policies like the fertilizer subsidy which have proven to increase productivity (Dorward &Chirwa, 2011:1) have to be encouraged. There is also need to research on better varieties of maize that would lead to higher output. Programs that would encourage farmers to venture into irrigation so as to avoid effects of weather changes would also work to the advantage of poor households.

6.4   AN ANALYSIS OF THE RELATIONSHIP BETWEEN EDUCATION AND POVERTY REDUCTION IN MALAWI

The Human capital theory which looks at education as an investment in individuals provide a basis for the link between education and poverty reduction (Oxaal, 1997:1). The human capital implies that an effective anti-poverty strategy should incorporate the enhancement of education and skills. Becker (1964:10) and Blaug (1970:170) contended that education embodies skill and attitudes in human beings that make them to become more productive in the work place. Although emphasis in the human capital theory has been laid on the formal sector of employment, the informal sector of self-employment and agriculture has also positive correlations with education. In the IHS 3 where the data for this study heavily relies on, it is stated that

education is a building block for human, political and socioeconomic development, particularly important for poverty reductions because it empowers the poor, the weak and the voiceless by providing them with better opportunities to participate in national development (NSO, 2012). It is from the forgoing that the model specified below was founded. The regression model specified in this objective has a number of education measures which are used as explanatory variables in explaining the variation in the district poverty rate. Section 6.4.2. that follows presents the descriptives and a discussion of some of these education measures.

6.4.2 Descriptive statistics of the education variables

The section that follows will discuss the descriptives of the measures of education levels. The measures to be discussed are, literacy rate, education qualification, and gross and net enrolment rates. These are the measures discussed since they are used in the regression analysis in the analysis of the relationship between education and poverty reduction in Malawi.

6.4.2.1 Literacy rates

Education levels are measured in different ways. Literacy rate is one way of measuring the education levels of a country. According to Word Bank (2013:), adult literacy rate is basically the percentage of the population age 15 and above who can, with understanding, read and write a short, simple statement presented as a percentage of the population above 15 years. Literacy also includes numeracy, which is the ability to make simple arithmetic calculations.

TABLE 6.15: LITERACY RATES BY GENDER

group	2004	2012
Male	76	74.4
Female	52.4	57.2
Malawi	65	65.4

Source: NSO, (2012:23)

Table 6.15 above presents the literacy figures for the two main rounds of Integrated Household Surveys (IHS) 2 and 3. These figures are necessary as they will offer a basis for comparison and better analysis in looking at the qualification figures. There is obviously be differences between literacy rates and qualification emanating from the fact that some people drop out of school before they get a qualification, and yet are able to read and write.

6.4.2.2   Education qualifications in Malawi

There are four qualification levels in Malawi, primary, junior secondary, senior sercondary and tertiary. In Malawi the first certificate is primary leaving certificate which is issued when one passes the national examination administered in standard 8, this certificate is called, primary school leaving certificate (PSLC). The second qualification is a Junior Certificate (JC) which is received after passing national examination written in form two, which is a second year of secondary education. The third qualification level is a Malawi School certificate of education (MSCE). This one is issued when one passes a national examination written in form four, the fourth year of secondary education. The fourth level is the tertiary one, where all qualification above MSCE are categorised together. The percentages of the qualification distribution are presented in table 6.16.

TABLE 6.16 EDUCATION LEVEL PERCENTAGES

Education level	Percentage for all districts
No qualification	72.7
With a qualification	27.3
Total	100

Source: IHS 3, NSO (2012:23)

There are more people with no education qualification in Malawi than those with a qualification. Table 6.16 above shows that 72.7 percent of the people in the sample had no education qualification. This however is different from the literacy rate which is much higher than the 27.3 percent of people with qualifications. Literacy rate in Malawi is defined as the percentage of people above the age of 15 who can read

and write in Chichewa or English or any other language. The rate was at 64 percent in 2004 and 65.4 in 2012 for the whole population and 76 percent in 2004 and 74.4 percent in 2012 among males (NSO 2004:19: 2012:23). The difference is due to the fact that not all that can read and write managed to get to the certification grade. In Malawi the first certificate is primary leaving certificate which is issued when one passes the national examination administered in standard (grade) 8. Table 6.17 further splits the 27.3 percent of people that have an education qualification into the levels of qualification attained.

TABLE 6.17 PERCENTAGE OF PEOPLE PER LEVEL OF QUALIFICATION

Education level	Percentage for all districts
Primary certificate	11.5
Secondary Junior certificate	8.9
Secondary MSCE (O-Level)	5.28
Tertiary Certificate	1.28
Total	27.3

Source: IHS 3 NSO (2012:24)

To clearly demonstrate the distribution, figure 6.6 of a pie chart below presents the data in table 6.17 graphically in their percentage contribution.

FIGURE 6.6: DISTRIBUTION OF QUALIFICATION
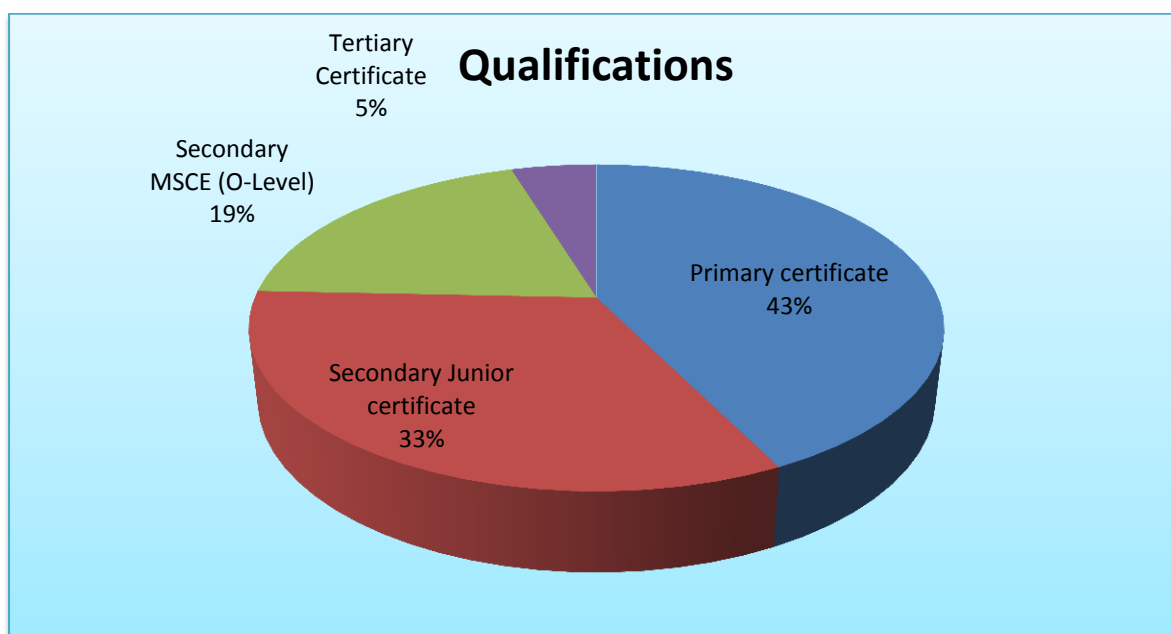
Calculation from IHS 2 and 3 data

The qualification levels are very low in Malawi, and also they are concentrated at the lower levels. With primary and lower secondary qualification taking close to 75 percent of all the qualifications, it is very difficult to see significant education effect on incomes where education levels are concentrated on the unskilled levels. The regression analysis below is used to estimate the effect of each education qualification on district poverty rate.

TABLE 6.18 DISTRIBUTION OF QUALIFICATIONS BY AREA AND REGION

	No qualification	PSLC	JC	MSCE	Tertiary
Urban	44.5	15.3	17.8	15.8	6.6
Rural	80.1	9.9	6.4	3	0.6
Northern Region	66.7	15.3	11.4	5.3	1.4
Central Region	75.1	10.5	8.2	4.8	1.5
Southern Region	75.5	9.8	7.5	5.5	1.8

Source: NSO, (2012:26)

The distribution of qualification in the regions shown in table 6.18, indicate that the north has the highest number of people with qualification. The percentage of those with no qualification, although high in general, is lowest in the North and highest in the Southern region. This agrees with the apriori expectation, of the relationship between education and poverty, because poverty rate is also the lowest in the Northern region and highest in the Southern region. The section that follows presents a regression equation and a discussion on the relationship between education and district poverty rate.

6.4.3 Regression results and discussion on education and poverty reduction

The regression that was estimated used district poverty rate as a dependent variable, where it was expected that the levels of education in the district would have an impact on the overall district poverty. Below is the linear regression;

$$\mathbf{DPR}_{it} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1} \mathbf{Educrt}_{it} + \boldsymbol{\beta_2}\mathbf{prim}_{it} + \boldsymbol{\beta_3} \mathbf{JC}_{it} + \boldsymbol{\beta_4} \mathbf{MSCE}_{it} + \boldsymbol{\beta_5}\mathbf{Tert}_{it} + \boldsymbol{\mu}_{it}$$
$$\text{... (6.4.1)}$$

Where DPR is the District Poverty Rate (DPR), Educrt is the district education rate which is a percentage of people that have some level of education. 100 – Educrt gives the percentage of people that don't have any education at all, this is the district uneducated rate. Prim is the percentage of people that have a primary education, JC is the percentage of people that have a Junior certificate in the district, MSCE is the percentage of people that have an MSCE certificate which is an equivalent to O-levels, and Tert is the percentage of people that have a tertiary qualification in the district.

Model 6.4.1 above was split into stages so that significant influence is isolated before estimating the whole model. The first stage is to estimate a simple regression as follows with literacy rate, as this is the best measure of education in Malawi;

$$DPR_{it} = \gamma_1 + \gamma_2 Literacy\ rate_{it} \ldots \qquad (6.4.2)$$

Where DPR is the district poverty rate and y_1 and y_2 are coefficients for the intercept term and literacy rate respectively.

TABLE 6.19 RESULTS OF THE RANDOM EFFECTS MODEL WITH LITERACY RATE

Regression 1			Regression 2	
Variable	**Coefficient**	**p-value**	**coefficient**	**p-value**
Constant	93.5479	0.0000***	82.49381	0.000***
Literacy rate	-.619527	0.0000***	-0.40216	0.001***
Access to electricity			-0.78355	0.000***
Wald Chi 2	20.01	0.000***	56.20	0.000***

Regression results using IHS 2 and IHS 3 data (significant *at 1%** 5%** 10 %*)

The first step in the analysis of education as a channel of poverty reduction considers literacy rate alone as a dependent variable as presented in regression 1 in table 6.19 above. This shows that irrespective of the qualification levels in the district, the ability to read and write has a significant influence on the reduction of poverty in Malawi. The coefficient was found to be significant even at percent significance level, leading to the rejection of the null hypothesis that there is no significant relationship between literacy rate and poverty reduction at district level. The coefficient shows that a unit increase in the district literacy rate percentage leads to a -.6195297 reduction in the district poverty rate. This means that education policies that aim at basic education participation are important if a country intends to reduce poverty.

Due to the fact that education qualifications beyond primary are a rear accuracy in Malawi, it was considered prudent to model education together with access to electricity as there is a correlation between access to electricity and the ability to study. Regression 2 in table 6.19 shows the results of a regression where, the district poverty rate was being explained by a percentage of people that have access to

electricity in the district and also literacy rate. Electricity was included as an indication of the availability of resources that promote education participation in households. Regressing access to electricity together with literacy rate as independent variables on poverty rate as a dependent variable produces impressive results. The null hypothesis that there is no significant relationship between education and poverty reduction is therefore rejected. The coefficient for literacy rate is significant at 1 percent significance level. A unit increase in the literacy rate at district level leads to a -.4021679 reduction in the district poverty rate. This result of the importance of education agrees with a study by Christiansen *et al.* (2003:339) who argued in their study that the experience in Ethiopia and Uganda where they got their data from demonstrated that better off households particularly those which were recorded to be more educated were less likely to be poor, and also were more likely to benefit from favourable micro economic changes. They also contend that a similar result was found in countries like Ghana, Madagascar and Zimbabwe where consumption levels increased with educational attainment, (Christiansen *et al. 2003:339*)

The regression equation 6.4.1 was estimated using 2012 data only This was done due to the fact that data on the other years was not available. This estimation was also useful in order to apportion the influence of education captured by the literacy rate at district level, an OLS regression was also estimated with literacy rate and other variables, which included net enrolment rate in primary, and gross enrolment rate in primary. An OLS regression was used because the data available on these variables was only for 2012. Since OLS estimation was done, the assumptions made about the error term were met and the results are reported in annex C.

The results of the OLS regression are not as impressive, this is because enrolment rates capture the pupils that are in school and hence may not have started to contribute anything to the society and hence not impacting on poverty rate. The literacy rate however was still significant confirming to the results of the model (6.4.2) in a simple regression reported in table 6.19.

TABLE 6.20 OLS RESULTS ON EDUCATION QUALIFICATION AND POVERTY

Regression 3			Regression 4	
Variable	**Coefficient**	**p-value**	**coefficient**	**p-value**
Constant	104.44	0.000***	76.4083	0.000***
Literacy rate	-.659	0.001***		
Net enrolment in primary	0.051697	0.941		
Gross enrolment in primary	-0.1075547	0.788		
Primary certificate			-1.773152	0.059*
Junior certificates			0.600	0.625
MSCE(O-level equivalent)			-0.560	0.769
Tertiary certificate			-4.923	0.225
F - test	9.95	0.000***		0.000***

Regression results using IHS 2 and IHS 3 data (significant *at 1%** 5%** 10 %**)

The results of regression in table 6.20 above shows that education is very important explanatory variable of the variation in poverty rate at district level. Although only primary qualification came out significant at 10 % it is important to note that the sign of the coefficient is negative indicating that an increase in the percentage of those with a qualification level has an associated decrease in the percentage of poverty at district level. A study by Psacharopoulos (1994) where he surveyed rates of return to education for 78 countries showed return to primary education ranging from 42 percent in Botswana to only 3.3 per cent in former Yugoslavia and 2 percent in Yemen. And the largest return to secondary was from Zimbabwe at 47.6 per cent p.a. It goes on to show that returns to education vary across countries for different levels. Linking education directly to poverty reduction, a primary certificate reduces poverty in Malawi at district level by 1.77 percent

A clear picture that is coming out from the analysis of education and district poverty rate is that basic literacy is a very important factor in as far as poverty reduction efforts are concerned. Its coefficient which was negative and significant in both the random effects and the OLS regressions indicate its importance. The implication of this result is that efforts aimed at reducing poverty in the country should include policies that are directed on increasing the number of adults that are able to read and write. One way to do this is to focus on the young people to participate in education at an early age. By the time they are 15 years old, it will have a greater effect on poverty as these people will be able to participate better in the economy.

These results are not unique, they agree with a study by Wedgwood (2005:3) who found that in Tanzania education had a negative effect on poverty. The impact in Tanzania was seen through increased earning as a result of education. Wedgwood however pointed out that there study revealed that the positive effect of education in reducing poverty is not automatic. She points out the need for better quality of education among other things (Wedgwood, 2005:14). Another study also in Tanzania by Sulle and Mtey (2013) also found a significant relationship between education and poverty reduction. Aref, (2011) used qualitative methods to find out perceived impact of education in rural Iran, The result was quite interesting as it showed that the rural areas in Iran are not benefiting from education due to what they called a number of barriers. These included migration of the rural educated to urban areas, lack of resources in school, limited access to secondary education among other things. What Aref (2011) did not do was to explain how the anticipated change in poverty was measured and hence, the results were purely based on barriers to rural education as opposed to the impact of education on poverty.

6.5 AN ANALYSIS OF THE RELATIONSHIP BETWEEN EMPLOYMENT AND POVERTY REDUCTION

This section deals with the objective that looks at employment as a channel for poverty reduction in Malawi. Among the many policy initiatives that developing countries use to deal with poverty, creation of employment is one of the important ones. The international Labour organisation (2008:5) clearly states that employment is one of the best routes out of poverty. Islam (2004:1) also agrees with ILO and points out that, job creation can contribute to the objective of poverty alleviation or reduction in situations of low income and high unemployment and underemployment. The recognition of the importance of employment in dealing with poverty by the International Labour Organisation (ILO, 2008:5) signifies the need to look at employment as a channel for poverty reduction. In Malawi as discussed in chapter four above employment is mainly in the agricultural sector Women are overrepresented in non-remunerative occupations 94 percent as compared to 80 percent of rural men and in low paid employment (NSO, 2012:). Moreover, rural female workers face a greater burden combining domestic and productive workloads compared to their male counterparts, which further restricts their participation in economically productive activities. The numbers of people in high skill jobs are very low (NSO, 2011:34). This objective uses data from the national year book, which records employment and labour force participation figures for the country on a yearly basis. The section that follows will present descriptive of employment measures in Malawi as these will be used in the regression model with district poverty rate as a dependent variable.

6.5.2 Descriptive statistics of employment variables

The picture of employment in Malawi should be understood in the light of the definitions that are used in the calculation of employment rate and unemployment rate. The definition that is used in Malawi in calculating employment rate includes all the people above the age of 15 years that are involved in some economic activity (NSO, 2011:34). Most of the people that are recorded as employed in the employment rate figures would be considered unemployed and poor in other

countries. And there are a lot of people that are said to be employed but are in the ultra-poverty category. This is because anyone who reported to have a small piece of land or who reported to have done any piece work (Ganyu) is recorded as employed. Table 6.5.3 below has people that are 65 years old and above having a labour force participation rate of 90 percent. This is on its own a strange picture in as far as employment is concerned, but these are people in the villages that go to their garden for subsistence farming that are also considered as employed hence qualifying for employment. Table 6.21 and 6.22 show that more than 80 percent of the employed people are subsistence farmers also called (Mlimi).

TABLE 6.21 EMPLOYMENT BY MAIN ACTIVITY

Main Activity	National rate	Males	Females
Agriculture/ forestry and fisheries	83	77	89
Manufacturing	1	2	1
Construction	1	3	0
Wholesale and retail	7	8	7
Social and community service	4	6	3
Other	4	4	0

Source: Malawi Statistical yearbook 2010: 34

As it has been argued already in the preceding section, there is need to understand the definition and the measurement behind the employment or unemployment rate reported in Malawi. Table 6.21 above clearly paint the picture of the employment scenario in Malawi. 83 percent of those above 15 years have their main employment activity in the agricultural sector. The sectors that are important in job creation for most developed countries are the manufacturing, construction and service sectors (BIAC 2013: 2). In Malawi however, only 1 percent of the labour force is in manufacturing and also 1 percent is in the construction sector which implies that if the agriculture sector was to be excluded, employment rate would be less than 17

percent. Table 6.22 below now shows the actual sectors where the people are employed.

TABLE 6.22 EMPLOYMENT BY SECTOR

Employment sector		National rate	Males	Females
private	Business	3	4	1
	Individual	3	5	2
Parastatal		1	1	0
Public sector		3	4	1
Mission/ NGO		1	1	1
Self Employed		9	11	7
Mlimi (subsistence farmer)		80	73	88
Estate		1	1	0

Source: Malawi Statistical yearbook 2011: 34

The employment sectors in which people are employed and the percentages are not that different. Table 6.21 is more or less a reflection of table 6.22.

The biggest percentage of the labour force is under subsistence farming, which by definition of employment these people are either self-employed or unemployed. The private sector which is considered the main source of employment in developed countries only contributes 6 percent. The public sector and the Parastatals employs in total 4 percent of the labour force. The self-employed are recorded at 9 percent of the total labour force. In a strict sense of the word, unemployment in Malawi should be considered to be above 80 percent of the labour force. However for the purposes of this study providing relevant conclusions to the importance of employment in reducing poverty in Malawi, a definition used by the national statistical office is adopted so that the regression proceed to estimate the relationship using the data available from NSO. Table 6.23 below presents the employment rates as reported by the national statistical office in the 2011 year book. Labour force participation and unemployment rates have also been included in the table.

TABLE 6.23 EMPLOYMENT BY AGE CATEGORY

	Labour force participation			Employment rate			Unemployment rate		
	Total	Male	female	Total	Male	Female	Total	Male	Female
Malawi	85	83	86	99	99	99	1	1	1
15-24	58	53	63	96	95	97	4	5	3
25- 34	98	98	98	99	99	99	1	1	1
35 -49	99	99	99	100	100	100	0	0	0
50 -64	98	99	98	100	100	100	0	0	0
65 +	90	95	86	100	100	100	0	0	0

Source: Malawi Statistical yearbook 2011: 33

If one would look at table 6.23 without the knowledge that 80 percent of those considered employed are subsistence farmers, it would give them a misled impression that Malawi is doing very well.

TABLE 6.24 EMPLOYMENT BY EDUCATION LEVEL

Education level	Labour force participation			Employment rate			Unemployment rate		
	Total	Male	female	Total	Male	Female	Total	Male	Female
none	92	91	92	99	99	100	1	1	0
Primary1-5	86	83	88	99	99	99	1	1	1
Primary6-8	81	80	82	99	99	99	1	1	1
Secondary+	77	80	74	97	97	96	3	3	4
urban	77	77	78	96	96	97	4	4	3
rural	86	84	87	99	99	99	1	1	1

Source: Malawi Statistical yearbook 2011: 33

Figure 6.24 above gives a picture on the relationship between employment and education level. With such high employment rate figures it is clear that the kind of

employment presented is not the one the benefits much from education. Basically it is low skill or non-skilled labour that is mostly represented in the data. For example, the employment rate for those with no education is recorded as 92 percent! Even in the European countries where they have the most jobs, these kinds of figures do not exist. This is a reason for serious consideration in the country in as far as the influence these kinds of data would have on employment policy. The fact that poverty rate is at 52 percent for the country as in 2012 and some districts have as high rates as 70 percent, it means the kind of employment considered here is not the one that assist in the reduction of poverty in the country.

TABLE 6.25 DESCRIPTIVES OF LABOUR FORCE AND EMPLOYMENT RATE

Variable	Observations	Mean	Std. Dev.	Minimum	Maximum
Labour force participation	62	91.04836	5.867463	65.3	99.1
Employment rate	31	92.45806	5.434751	78.7	99.4

Calculations Using NSO data

The descriptive statistics in tables 6.25 above shows the mean distribution of labour participation at district level. The fact that 91 percent of the population above 15 is active labour force indicates the importance of employment availability in the country. Using labour force and employment rate as the dependent variables, a regression was estimated and the results are reported in table 6.26 below.

TABLE 6.26 RESULTS OF THE OLS REGRESSION MODEL

Poverty rate	Coef.	Std Err.	t	P value	95percent Conf. Interval	
Labour force participation	1.303601	.2819238	4.62	0.000***	.761065	1.881096
Employment rate	-.021976	.3650228	-0.06	0.954	-.7691129	.7263177
Constant	-65.28643	41.91115	-1.56	0.131	-151.1375	20.56466
F statistic= 10.70 p- value of F test = 0.0004***						

Regression results using IHS 2 and IHS 3 data (significant *at 1%** 5%** 10 %*)

The results of the OLS regression presented in figure 6.26 above echoes the same argument being advanced in the preceding paragraph. The t statistic tests the hypothesis that each coefficient is different from 0. To reject this hypothesis the t-value has to be higher than 2.05 for 95 percent confidence or as sometimes called 5 percent significance level. The same with the p- value which is mostly used which tests the hypothesis that each coefficient is different from 0. To reject this hypothesis the p-value has to be lower than 0.05 for 95 percent confidence interval or 5 percent significance level. The coefficient of labour participation although significant has a positive sign, meaning that the more people enter the labour force the higher the poverty rate at district level. This could be explained by looking at table 6.24 which shows the qualification levels of the people entering the labour force. These are non-skilled labourer entering the labour force hence reducing the bargaining power of those already in the system, and consequently affecting the minimum wage. When there are more people in the labour force it means there are so many people looking for employment, especially in a scenario like Malawi where more than 80 percent are not in formal employment. This gives the employers an opportunity to offer less and hence worsening the incidence of poverty.

There are studies that have shown a clear relationship between employment status and poverty reduction. A study by Sekatane and Dunga (2013:213) used data from a South African township of Bophelong and found a significant relationship between poverty and employment. The study showed that households whose head was employed were less likely to fall below the defined poverty line.

The foregoing analysis of the relationship between poverty reduction and employment has been marred by the absence of a true representation of the employment scenario in the country. The measures of employment and unemployment that are available from the National statistical office have a very unreliable definition which includes subsistence farmers as being employed. The results of the regression analysis therefore show that an increase in the number of people joining the labour force increases the incidences of poverty at district level. The coefficient for labour force was positive which is different from apriori expectations.

A very important conclusion that has been drawn from the study is that, if the country wants to seriously deal with poverty through employment then there is need to discover the actual unemployment rate in the country.

6.6 AN IVESTIGATION INTO THE RELATIONSHIP BETWEEN ACCESS TO LOANS AND POVERTY REDUCTION IN MALAWI

Most households in developing countries like Malawi are agricultural with no formal employment and it makes it difficult for them to access loans and credits from the formal financial sector. With all the efforts that have been put over the years to reduce poverty, there still remain a lot of people that are stuck in poverty. As part of the poverty alleviation strategy, governments in other developing countries like India (Shastri, 2009) Malawi (Diagne & Zeller, 2001) Ethiopia (Pitamber, 2003) have put in place measures that help poor households to access loans mainly for small enterprise and agricultural inputs. The importance of access to loans and credit in reducing poverty is the centre of this objective.

6.6.2 Descriptives of the variables in the access to loan and credit model

There are different typed of loans that people receive or access depending on the needs. The apriori expectation of the model is that each loan type would have a different effect on poverty. The expectation is that the higher the percentage of people accessing loans or credit in the district the lower will be the district poverty rate. Figure 6.7 below reports the proportions of people in the country that applied for a loan that obtained a loan that were refused a loan and that are still waiting for a response.

Most of the information on loans is drawn from IHS 3. The loans and credits that households in the survey reported on were from both the formal sector, that is banks and money lenders, and also from the informal sector like friends and families. Within the people that reported to have obtained a loan in the household, the highest percentage was for business start-ups.

FIGURE 6.7: PERCENTAGES OF ACCESS TO LOANS
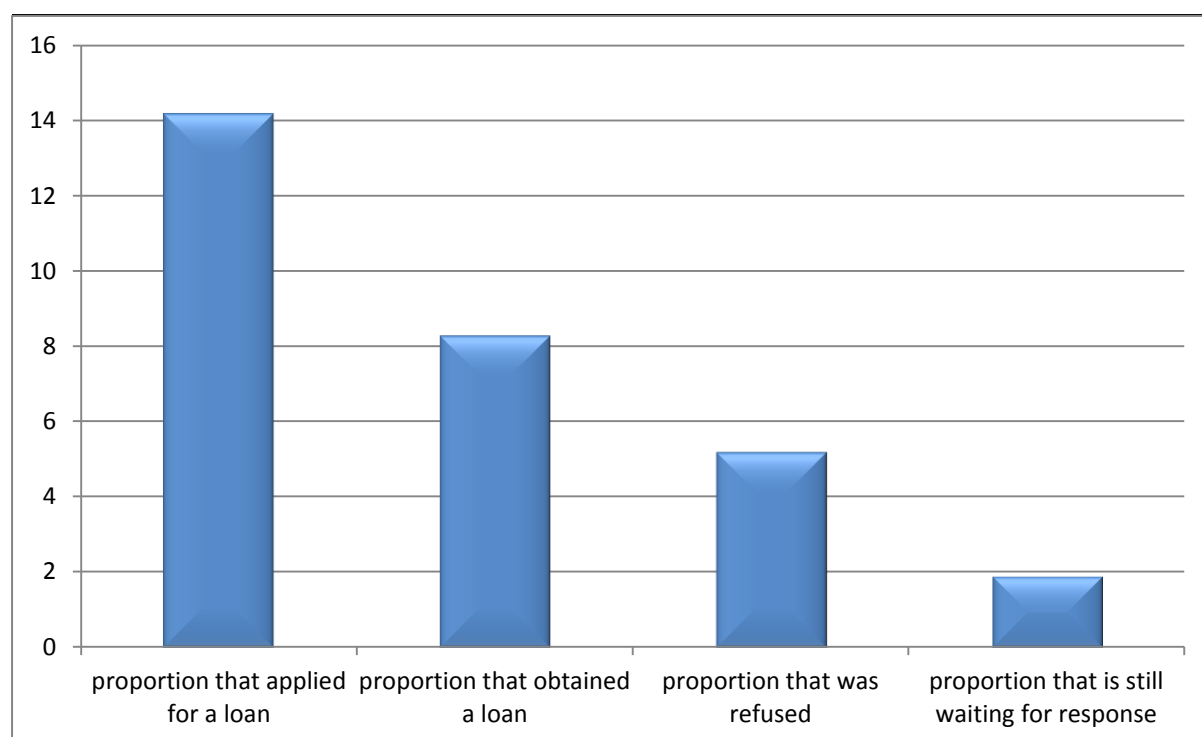
Source: NSO, 2012:58 (IHS 3)

According to NSO (2012:57) the majority of these people were also in urban areas. Out of the total people that obtained a loan, 61 percent were in urban areas and 35 percent were in rural areas. Another striking result was that women were found to be more likely to obtain a loan for business start-up, reporting a 52 percent as opposed to males who were only 37 percent. Figure 6.8 below presents the percentages of people according to the purpose a loan was obtained for.

FIGURE 6.8: PURPOSE FOR OBTAINING A LOAN
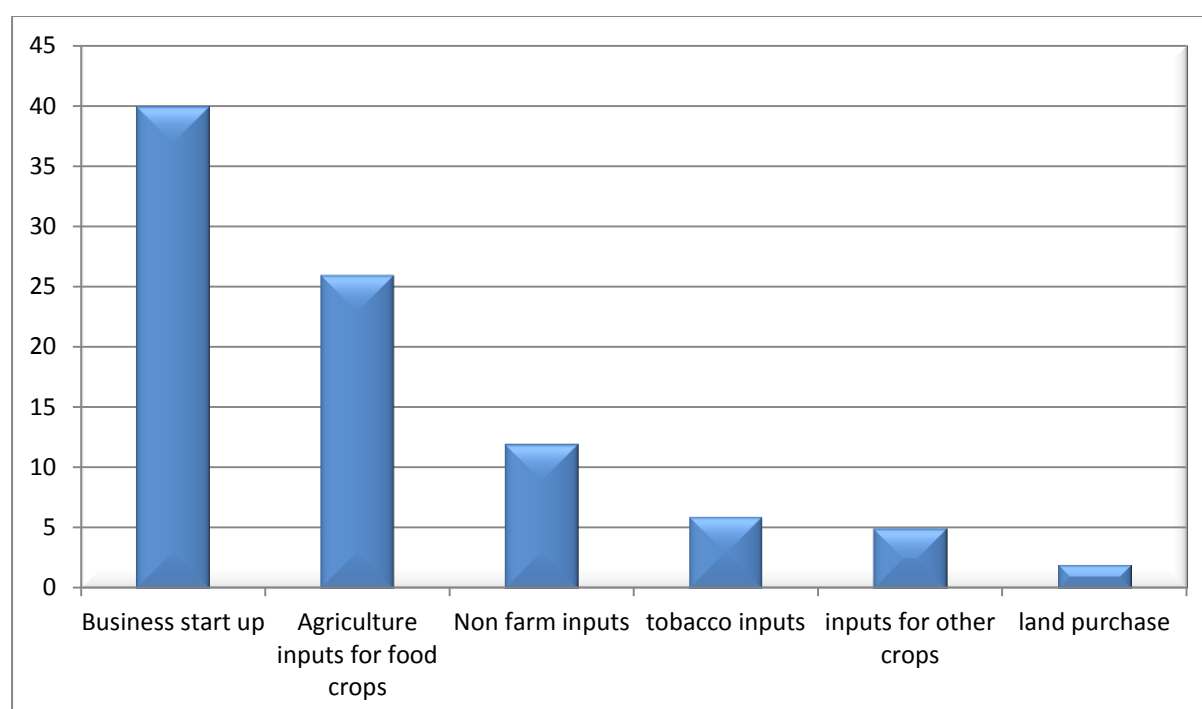
Source: NSO IHS 3 (2012:57)

Table 6.27 below reports the descriptive statistics of the variables in model (6.6.1). The other variables are directly linked to the objective of the study on the relationship between access to loan and poverty rate at district level. All the variables used are district percentages, for example proportion of people that received a loan shows that on average 10.37 percent of people across the districts in Malawi received a loan. The highest percentage that received a loan was 27.3 percent for Nkhotakota district and the lowest was 1.1percent for Mangochi, giving a standard deviation of 5.95

TABLE 6.27 DESCRIPTIVE STATISTICS OF THE ACCESS TO LOAN VARIABLES

Variable	Obs.	mean	Std. dev.	Min	Max
Loan for agro inputs	62	23.01	16.31	0	65.7
Proportion that received a loan	62	10.37	5.95	1.1	27.3
Loan to buy land	62	1.04	2.39	0	10.3
Loan for business start up	62	40.0	18.90	6.6	78.3
Loan for tobacco inputs	62	11.0	17.95	0	67.1

Calculations Using NSO Integrated Household Survey- 2& 3

The expectation of a positive correlation between access to loans and poverty reduction is also reflected in these two extreme districts. The head count poverty rate for Nkhotakota is 48 percent below the national poverty rate at 54 percent and that of Mangochi is 73 percent far higher than the national average. The highest percentage of the types of loans received was 78 percent for business start-up and it was registered by Mulanje. This however was the percentage of the received loans, and for Mulanje district, the proportion of people receiving loans was just 7.8 percent, hence 78 percent of these 7.8 percent were for business start-up. Table 6.27 above has the details of the descriptives of all the other variables included in the model.

$$DPR_{it} = \beta_{1it} + \beta_{2it}AtE_{it} + \beta_{3it}LfA_{it} + \beta_{4it}LtBL_{it} + \beta_{5it}LfBs_{it} + \beta_{6it}LfTI_{it} + \beta_{7it}PrL_{it} + \omega_{it} \dots \quad \textbf{(6.6.1)}$$

Where DPR is the District Poverty Rate, β_{1it} Is the random effects intercept term, $\beta_{2it\dots7it}$ are the coefficients for the independent variables, **LfA** is loan for agricultural inputs, **LtBL** is percentage of people with a Loan to buy land **LfBs** is the percentage of people with a loan for business start-up **LfTI** is the percentage of people with a loan for tobacco inputs **Prl** is the proportion of people in the district receiving a loan and ω_{it} is the random effects composite error term

Just like in the analysis of agricultural production, the random effects model was opted for as opposed to the fixed effects model in this analysis of access to loans and poverty reduction based on the Breusch –Pagan test. The BP test for the access to loans model had a chi squared test statistic of 11.92 and a p-value of 0.0003 which lead to the rejection of the null hypothesis that variance is equal to 0. The null hypothesis that variance is equal to zero means that there are no random effects and hence not appropriate to use random effects. The results of the test for the model 6.6.1 rejects this null hypothesis. This entails that the best model for this panel data set is the random effect model. The results of the Breusch- Pagan test are reported in annex D. The correlations between the independent variables are also reported in annex D showing that there is no multicollinearity between the independent variables. There is no perfect correlation coefficient found for the variables included in the model. The model estimated used the district poverty rate as a dependent variable and a number of loan aspects as independent variables as follows;

6.6.3 Results of the Random Effects regression model 6.6.1

Equation 6.6.1 was run in STATA and the results are as reported in table 6.6.2 below

TABLE 6.28 POVERTY AND ACCESS TO LOANS VARIABLES

District Poverty rate	Coef.	Std. Err.	z	P $>$ value
Loan for agric inputs	.0342	.1117921	0.31	0.759
Proportion receiving a loan	- .5032177	.2634521	-1.91	0.056*
Loan to buy land	-1.096321	.5833007	-1.88	0.060*
Loan for business start up	.2229081	.117896	1.89	0.059*
Loan for tobacco inputs	.1118941	.1023866	1.09	0.274
constant	54.75106	8.676472	6.31	0.0000***
Wald Chi2 (6) = 73.65				
P- value of chi2 = 0.0000				

Calculations Using NSO Integrated Household Survey- 2 & 3 (*Significant at 1%***, 5%** 10%*)*

Table 6.28 above presents results of the random effects regression from equation 6.6.1 above. The district poverty rate from IHS 2 and IHS 3 were used as dependent variable. The Chi squared test for the model has a p value of 0.000 which shows that the model is a good fit even at 1percent level of significance.

The number of people accessing loans also produced a negative sign as expected, meaning, as more and more people access loans for whatever reason, the district poverty rate declines. The regression result shows that a unit change in the percentage of people accessing loans leads to a 0.5 percent reduction in the district poverty rate. This is the same result found by a study in Vietnam by Quach *et al.* (2005) which found that household credit contributed positively to economic welfare of the households. The significant contribution was found on per capita expenditure, per capita food and non-food expenditure (Quach, *et al.* 2005:1). They further argued that the positive impact found in Vietnam was on both poor and non-poor households .This indicates that increasing access to credit and loans to the poor households reduces the incidences of poverty.

The results for loans to buy land was also significant at 10 percent and with a negative sign showing that, access to loans for land which implies access to land has a negative effect on district poverty rate. This implies that if more people would have access to buy land, the district poverty rate would be reduced. Loans for business start-up had a positive effect which was against the apriori expectation. However this can be explained in the sense that loans for business start-up are obtained from lenders who are mostly likely charging higher interest rate and hence instead of improving the situation of those that obtain it, it worsens their situation.

Shastri (2009) on arguing for India pointed out that the dynamic growth of the microfinance industry has been promoted not only by market forces but to a greater extent also by conscious actions of national governments, Non-Governmental Organizations (NGOs), and the donors who consider microfinance and access to credit by poor households as an effective tool for dealing with poverty. The relationship between access to credit and poverty reduction is therefore a well-documented one in the literature. Other studies that have shown a positive impact of

access to credit on poverty reduction include (Bhandari, 2009; Quach, Mullineux, & Murinde, 2005; WorldBank, 2007; Pitamber, 2003) among others.

The importance of loans in the poverty reduction efforts has been confirmed in the data analysis. The regression results show a negative relationship between district poverty rate and the proportion of people that obtained a loan. This was in agreement with theory and apriori expectation that the more people have access to loans the lower the incidence of poverty. It was also reported under the descriptive statistics that most people obtained their loans for business start-ups. This implies a positive correlation between loans and business being started. It can be concluded from this finding therefore that, if governments are interested in reducing poverty incidences in the districts, there is need to provide more opportunities for loan accessibility. This would in the process reduce the burden of job creation on the part of government as the people are able to start-up businesses.

6.7   ANALYSING THE RESPONSES OF DIFFERENT POVERTY MEASURES

The objective was set with the intention of finding out if there is a measure that is more accurate than the others. It must be pointed out that all the measures used in this study are income based and hence very much related. There are four measures considered in under this objective. Table 6.29 below presents the summary of these poverty measures as calculated by the National statistical office of Malawi.

TABLE 6.29 POVERTY MEASURES FOR 2012

	Observations	mean	Std. Dev.	Minimum	Maximum
District poverty rate	62	52.07	16.9	7.6	81.6
Ultra poverty rate	62	23.9	12.94	2	59
Poverty gap	62	18.48	8.52	1.9	40.6
Ultra poverty gap	62	4.41	4.41	0.4	21.9

Calculations Using NSO Integrated Household Survey- 2 & 3

To check for the difference in the results as the dependent variable changed from one poverty measure to another, a number of regressions were estimated using the variables considered in the objectives above.

TABLE 6.30 COMPARING DIFFERENT POVERTY MEASURE WITH LITERACY RATE AS THE INDEPENDENT VARIABLE

Poverty measure	Coefficient for literacy rate	Std err	z	p- value
District poverty rate	-.1813946	.0655278	-2.77	0.006***
Ultra poverty rate	-.3396917	.1051483	-3.23	0.001***
Poverty gap	-.1004771	0374008	-2.69	0.007***
Ultra poverty gap	-.2900976	.1199178	-2.42	0.016**

Calculations Using NSO Integrated Household Survey- 2 & 3 (*Significant at 1%***, 5%** 1 0%**)

The results in table 6.30 above show that there are differences in the coefficients that are very minor. The sign of the coefficients for all the four different measures of poverty are the same. In this case an increase in literacy rate has a negative effect on poverty. The negative is reflected in the coefficients of all the poverty measures. The significance of the coefficient is also similar in all the poverty measures. Literacy rate was found to be significant at 1% significance level in all the poverty measures except for Ultra poverty gap where it was significant at 5% significance level. This similarity implies that as far as the percentages of the income poverty measures are concerned, it does not really matter with one of the measures between the four, is chosen, the result will remain the same.

6.8   CONCLUSION OF THE RESULTS AND DUSCUSSION CHAPTER

The empirical objectives of the channels of poverty reduction discussed in the chapter were organised according to the set objective in an attempt to address the overarching aim of the study. On the onset the study ventured to establish the assumption that poverty reduction had occurred in the country between 1998 and

2013. To achieve this, the study looked at trends of poverty over the years under study and concluded that there was a notable declining trend in the national poverty rates. The main sources of data for the trends were the Integrated Household Surveys (IHS) 1, 2 and 3. The study went further to test whether the mean poverty rates for the three IHS rounds had a statistically significant difference. The t-test showed that there was a statistically significant difference in the years starting 1998 to 2012 with the difference showing a reduction in the mean poverty rate of around 15.07 percent.

The study also intended to assess how economic growth at district level proxied by agricultural production and land holding affect poverty at district level in Malawi. This was addressed using a regression that had district poverty rate as a dependent variable and a number of agricultural related variables including local maize production as independent variables. The results showed that an increase in the production of local maize was associated with a reduction in poverty. This however was also related to the finding in education where literacy rate was found to be important in reducing poverty at district level. Theoretically, education and agricultural production are linked in that literate people are said to be better farmers, and that they are more productive (Huang, 2009:1). Weir (1999) looked at the effect of education on farmer's productivity in Ethiopia and found that a minimum of four years of primary schooling had an effect on farmer's productivity.

The study also found that the input subsidy program being implemented in Malawi has an impact on poverty. Looking at the volume of fertilizer given to the districts, the study found that a unit increase in the tonnage of fertilizer had negative effect on the district poverty rate.

The investigation on the effects of access to loan on poverty reduction in Malawi was also one of the objectives in the study. This is also linked to the agricultural production in the sense that farmers used loans for inputs. The results of the regression model showed that the proportion of people that received a loan which was a combined district level percentage had a negative relationship with poverty. Implying that an increase in the percentage of people in the district who have access

to a loan, regardless of the purpose the loan is taken for, reduced the district poverty rate with a unit change in the proportion of those receiving a loan having a -0.503 percentage points change in the district poverty rate. The study found that more than 25 percent of the loans were obtained for agricultural inputs, hence access to loans contributed to agricultural production.

The relationship between employment or unemployment and poverty reduction at district level in Malawi produced an interesting discovery. It was discovered that the data on employment in Malawi was compromised due to the definition of employment which to a greater extent was very loose. The data available from NSO had employment rates in Malawi above 90% in all the different categories. This is only possible because the definition of who is employed in these data sets includes the subsistence farmers who are taking up more than 80 percent of the employment rate (NSO, 2011:34). The actual employment rate that could have made sense would be the one that looks at the formally employed. These figures are not available.

The chapter also investigated if different poverty rates as calculated from the income measures of poverty produce results that are significantly different. The results showed that generally the results are not different at all. With the coefficients coming out significant when the poverty measure is changed. Even those coefficients that were not significant when the head count measure was used remained the same when the dependent variable was changed to the ultra-poverty measure or the poverty gap measure.

CHAPTER 7   SUMMARY AND CONCLUSION OF THE CHANNELS OF POVERTY REDUCTION IN MALAWI

7.1   INTRODUCTION

The poverty scenario in Malawi as presented in chapter 4 and as shown from the data is a serious one and requires attention. the study on the channels of poverty reduction reported herein made an attempt to discover the most effective channels that can be focused on to reduce the incidences of poverty in Malawi. This chapter presents a conclusion of the study, moving from the problem statement, the objectives, the methodology and the models estimated, the results and the implications of the results. The expectation was that the results found could be used as a reference for other countries that have similar conditions like Malawi. But also to understand that it does not just end at the relationship between growth and poverty in the equation, but to further understand that any level of growth that any country experience requires certain pre-requisites to be in place to realise any poverty reduction. Hence it was the aim of this study to uncover how growth translates to increased incomes for the poor and a better life in terms of access to basic necessities by the poor. Specifically, the study had the following objectives formulated to guide in the quest for the channels of poverty reduction in Malawi;

Theoretically the study was intended to address the following objectives; to provide a background of Malawi as a case study country. This was done is such a way that all the idiosyncrasies of Malawi were considered so that countries with similar circumstances may find the conclusion drawn useful. In order to understand the issue under consideration there was need to also review the literature on poverty theories, looking at the different measures of poverty and the theories behind the measures. Since the study emanated from the premise that there has been growth in Malawi and hence ventured to see if the growth experienced had an associated reduction in poverty, another theoretical objective was to review the literature on the link between poverty reduction and the channels of poverty reduction namely;

Economic growth, Education attainment and qualifications, access to loans and credits, agricultural production, and employment and or unemployment.

Empirical the study was intended to look at a number of objectives which were basically the channels of poverty reduction hypothesised from the theoretical literature. The following objectives using data on Malawi which was aggregated at district level were pursued;

- To investigate if there has been any poverty reduction in the years 1998 to 2012 in Malawi.
- To assess how economic growth at district level (proxied by agriculture production and land holding) affect poverty at district level in Malawi
- To assess how education levels affect poverty reduction at district level in Malawi
- To conduct an analysis on how employment or unemployment affect poverty reduction at district level in Malawi
- To investigate on the effects of enterprises and access to loan on poverty reduction in Malawi
- To determine if different poverty measures exhibit statistically significant different responses to the channels of poverty reduction.

This conclusion chapter is organised as follows; the next section 7.2 presents a brief conclusion on the theoretical foundation of the study. Section 7.3 revisits briefly the profile of Malawi the study country. Section 7.4 presents a very small brief of the channels of poverty reduction. The methodology of the study is also presented in brief in section 7.5. The summarised conclusions are presented in section 7.6. Section 7.7 makes a number of policy implications. Limitations of the study have been acknowledged in section 7.8 and areas for further study are in section 7.9

7.2   THE THEORETICAL FOUNDATION OF THE STUDY

The study reviewed the theories of poverty, poverty measures and perceptions on the causes of poverty. An effort was made to point out the fact that the head count

as a measure is commonly used in most poverty studies, specifically in Malawi where data for this study was drawn from (NSO, 2012:205). However to justify the premise that there have been changes in income, there was need to show changes in the income levels especially of the poor. Bourguignon (2003:1) for example, contended that many papers dealing with poverty focus of the effect of growth. In his argument of the importance of growth in poverty reduction, he cited studies by de Janvry and Sadoulet (1995; 2000), Ravallion and Chen (1997) and Dollar and Kraay (2000). He argued that poverty reduction studies using regression analysis points to the evolution of poverty between two point of time explained by growth of income or GDP per capita and a host of other factors. One source of new income in a country is economic growth as pointed out by Warner, (2006:173). Where economic growth is understood as an increase in a nation's output according to Todaro *et al.* (2011:78). In echoing the importance of growth to poverty reduction, Christiaensen *et al.* (2003:319) stated that it is widely accepted that growth is at least a necessary condition for sustainable poverty reduction and this was in reference to similar sentiments by Kanbur (2001:1). This link between poverty reduction and economic growth therefore necessitated a discussion of theories of economic growth and their relationship with poverty reduction. Theories of economic growth have been discussed based on the premise that any poverty reduction strategy can only work better if there is new wealth created in a country (World Bank, 2012).

In the absence of economic growth poverty reduction efforts would be the same as income redistribution of the existing wealth. The study has also discusses issues of equity and income distribution as related to poverty reduction. It should be pointed however that the core of this study was on the channels through which the new created wealth is transformed into poverty reduction. The channels considered in this study are; education, agricultural production, access to loans and credit also referred to as enterprise and employment.

7.3   THE PROFILE OF MALAWI

Malawi is one of the poorest of the least developed countries in the world, with an HDI of 0.418 in 2012 ranking 170 out of 187 countries on new ranking of the Human

Development Index for 2013 (UNDP, 2013:3). It has a Gross Domestic Product (GDP) of around US$4.7 billion and GDP per capita of approximately US$310. The population growth rate in the country is one of the highest, standing at around 2.4 according to NSO (2010:1). Between 1997 and 2005 the country experienced modest economic growth averaging around 3 percent and also a high degree of volatility and instability in the macro- economic factors. Emanating from the consequences of high population, with a population growth of over 2 percent per annum, per capita income increased by only 1 per cent over the period. The years 2005 to 2008 had considerable macro-economic performance. Inflation was held to single digit for the whole time. Positive macroeconomic management, good rains and favourable weather conditions and a supportive donor environment contributed to high growth rates, averaging 7.5 per cent from 2006 to 2008 (WB, 2010:1, IMF, 2009:1)

The country is divided into three regions; the north, the centre and the southern region. The southern region is the most populated of the three regions (NSO, 2012:4). The country is further divided into districts which are under local government headed by a district commissioner (DC). Politically a district is further divided into constituencies and these are represented by a Member of Parliament (MP). Members of Parliament are elected official whereas DCs are not elected but appointed official. For the purposes of this study the focus was on district level as these have different economic and social characteristics which later feed into the general profile of the country. There are no sub-governments on regional level, so the governments at district level report directly to the national government and these districts are under the ministry of local governments. The study has used district poverty rate as a measure of poverty which was arrived at from comprehensive household surveys.

7.4   THE CHANNELS OF POVERTY REDUCTION

The chapter on channels of poverty reduction presented a review of the literature on channels of poverty reduction. Studies around poverty reduction have revealed a number of factors that can be looked at as channels of poverty reduction. These

factors include; education levels of a country, employment rate in different sectors of the economy and the dynamics of the wage rate (Islam (2004:1), enterprise of the households and access to capital for people of different income brackets (Shastri, 2009:2), agricultural productivity especially for developing countries, (Chirwa, 2004:1) among other things. The study concentrated on agricultural production, education, employment rate, and access to credit or loans as the main channels of poverty reduction. A detailed review of each of these channels was presented. Also other relevant channels were discussed although not included as part of the empirical analysis. One of them is trade, which the study tried to link with increase in economic growth and their relationship to poverty reduction.

7.5   THE METHODOLOGY

The chapter on methodology discussed the methodology of data collection as was done by the National statistical office (NSO) and the data used in the analysis of poverty at district level in Malawi. The first section of the chapter pointed out the data sources of the secondary data used. It also explained the nature of panel data and the implications of using a panel data. An explanation of the modelling of the regression employed in the study was also explained in this chapter. Due to the nature of the study and the data used an appropriate panel data regression model was specified. A detailed process of fixed effects regression model and random effects regression model was presented as the options that can be used for the analysis. A Breusch – Pagan Lagrange multiplier test was used to decide on which methodology is best suitable between the fixed effects model and the random effects model. The test showed that the random effects model was the suitable one for the regression analysis.

## 7.6   CONCLUSION OF THE STUDY

The study was set out to analyse the channels of poverty reduction at district level in Malawi. The basis for the formulation of the title, the objectives and the methodology used was on the premise that Malawi as a country has one of the high levels of poverty in the region; it was reported to be at 52 percent in 2012 (NSO, 2012:205).

The UNDP (2013:1) reports an even higher rate for those below the multidimensional poverty line, recoding it at 66 percent. Also following the high poverty rates was the fact that the country had experienced a reasonable amount of growth in the past decade or two. The research problem emanated from the fact that the literature shows a strong relationship between economic growth and poverty reduction and with a good trend of growth, there was supposed to be an associated reduction in poverty level. The study was also interested in going further to discover if any poverty reduction then through what channels. It was pointed out in the problem statement that most studies have managed to show a correlation between economic growth and poverty reduction (Dollar and Kraay, 2000; 2001; 2004; Chirwa, 2004; Chirwa *et al.* 2008; Mukherjee & Benson, 2003) among others, without necessarily showing how growth changed the lives of the poor. The study therefore identified agricultural production, education, access to loans and credit or enterprises and employment or lack thereof as potential areas that can channel wealth created or realised in the periods of economic growth to the poor. These were then set as separate objectives in the study of the channels for poverty reduction in Malawi.

Another unique feature of the study was the level of analysis. As opposed to a country level analysis that utilises a sample for the country as a whole, the study used district level data. This made it possible to isolate different scenarios which are a characteristic of poverty incidence in the country. There are districts that have very low rates of poverty and these districts have their own unique characteristics, which could not be captured if only national averages were considered. For example the study discovered that the districts in the Northern region of the country had the lowest poverty rates and this was associated with high education percentages. This feature was also seen in the southern region where the districts displayed low education rates and they had the highest poverty rates in the country, a good example was Nsanje which had a poverty rate of 81.2 the highest of all the districts, had also a very high rate of those that never attended school, at 45.9 percent, just second to the lowest in the country. This focus on district data therefore allowed the study to identify areas that can be looked at in as far as efforts for poverty reduction are concerned.

The findings in the study agree with apriori expectation pertaining to the relationship between the considered channels and poverty reduction. There is a clear interconnection between the channels that was being identified out of the significant variables. Figure 7.1 gives a summary of the linkages between the channels of poverty reduction.

FIGURE 7.1 THE INTERCONNECTION OF THE CHANNELS OF POVERTY REDUCTION
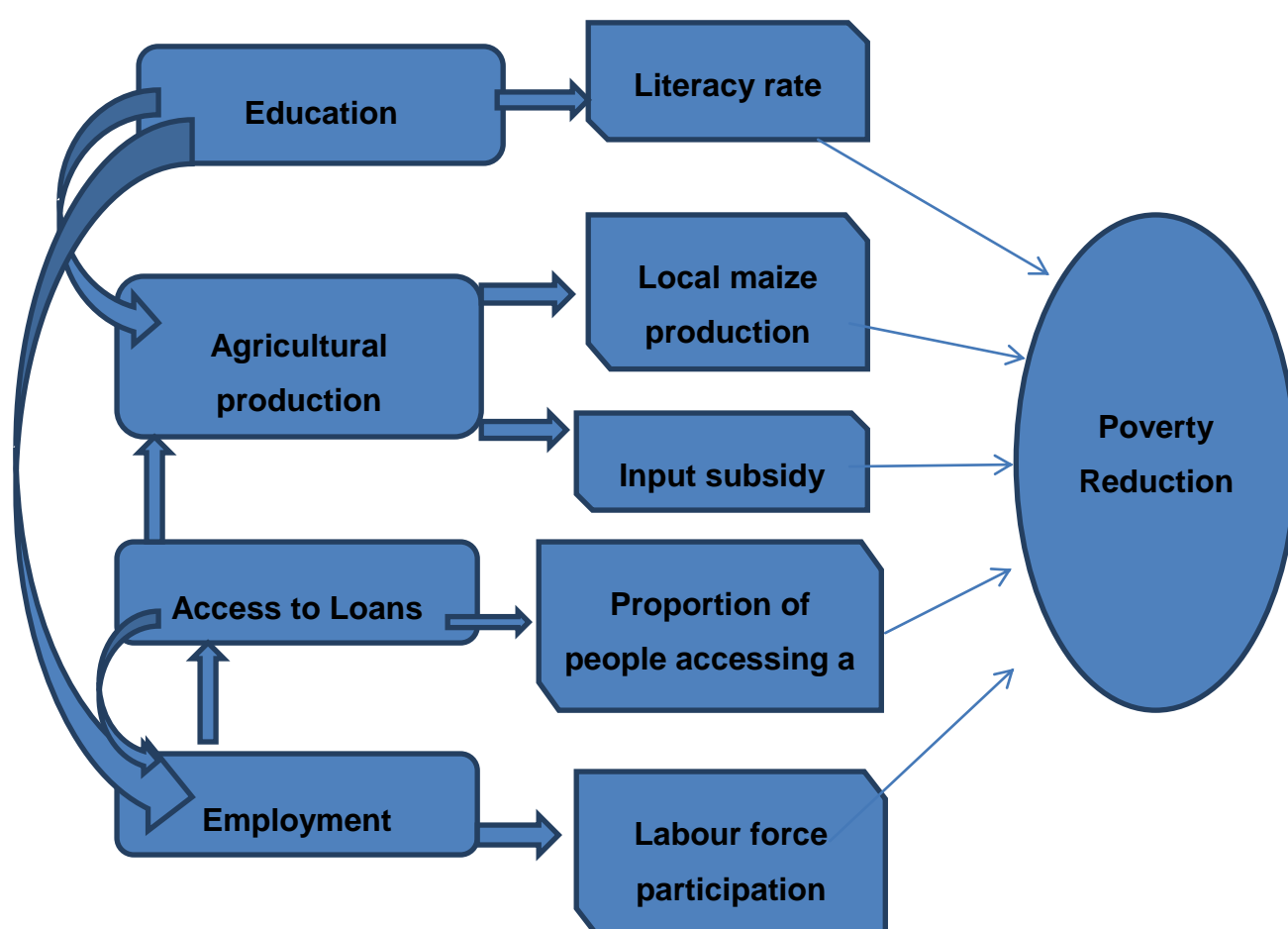
Authors design (Dunga 2013)

The framework presented in figure 7.1 has been arrived at from the results in the regression models considered in chapter 6. The framework points to the fact that the channels of poverty reduction rely on the performance of each other. Both the

literature review of the theories and the empirical results of the study show that there is no channel that can solve the poverty problem on its own. Emanating from the relationship between economic growth and poverty reduction that is ubiquitous in the literature, the study first considered agricultural production as a proxy for growth at district level in Malawi. Using district poverty rate as a measure of poverty, the study used agricultural production measures to explain the relationship with poverty at district level. The study started by determining the trend in poverty from 1998 to 2012. This was done to justify the premise of the existence of a reduction in poverty which could then be linked to economic growth.

The study looked at trends of poverty over the years beginning 1998 and found that there was a statistically significant reduction in poverty rates between 1998 and 2012. The study went further to use a t- test which showed a mean difference of district poverty rates amounting to 15.07 which was significant at 1 percent significance level. The t- test confirmed that poverty rates had changed between the year 1998 and 2012 by 15.07

On growth which was to be linked to poverty reduction, it was established that there had been a significant growth in Malawi over the past two decades. This growth however had been seen to be erratic where in other years it was higher and in other years lower. The study also revealed that poverty reduction in the country, which was mirrored in the district poverty rates, had been on a downward trend with the exception of the years 2011 and 2012 where the situation started to worsen again and district poverty rates started picking up again. One of the reasons for the change in the trend of poverty had been the turmoil in the macro economic variables in the country. The study pointed to the fact that the local currency suffered a devaluation which consequently led to the tumbling of the exchange rate, and a free uncontrollable rise in the inflation rate. These macro-economic instabilities were coupled with the shortage of fuel in the country and a loss in production amounting to millions of dollars. The conclusion however was that the country experienced enough growth that was expected to have an impact on the poverty incidences of the country

Considering the finding of growth and also a reduction in poverty, it was the important aim of the study to establish the channels through which poverty reduction was unleashed as emanating from economic growth. As is shown in the framework in figure 7.1 the study looked at agricultural production, education, employment and access to loans and credit as the channels of impact.

The study found that the relationship between agricultural production and poverty was significant. The most important aspect of the agricultural production variables was local maize production which had a negative significant coefficient. This implied that a consistent increase in the production of maize which is a strategic crop in Malawi would have a significant effect on poverty. This according to the frame work in figure 7.1 is also connected to the education. The fact that local maize production had a negative effect on poverty may be due to the knowledge that people in the country have on the maize. Education if promoted properly would lead to better knowledge even on products that are new and hence promote productivity. The other important finding was the effect of the input subsidy being implemented in the country. The study found a negative relationship with poverty that was significant. This shows that government's effort in funding the national wide fertilizer subsidy has some bearing on the poverty level of the country.

The findings which agree with other studies like (Dorward and Chirwa, 2011:1) also revealed the importance of other factors like land holding which although not significant in the regression result, have been pointed out to be very important in the efforts of poverty reduction in the country.

On the objective of education as a channel of poverty reduction, the study also found a significant relationship. This was clear on the impact of literacy rate on poverty reduction. The regression results showed a significant negative relationship between literacy rate and poverty reduction. This means that policies that aim at increasing school participation among the youth will have a greater effect on poverty in the medium to long term.

There are several conclusions that can be drawn, first, that literacy rate should be considered first even including adult education for those adults that have already passed the school age. The policy of free primary education, has improved enrolment rates in the country (Chimombo, 2005; Dunga, 2012) and this has already started showing results especially in the literacy rates. Although other studies have argued that there is also need to look at the quality of education being offered in the schools, since quantity alone is not enough.

The channels of employment in poverty reduction was found to be significant but in a direction unexpected. Labour force participation had a positive influence on poverty rate at district level. A number of things were discovered; first the employment rate as reported in the statistical year book is misleading. What is considered employment in these statistics is basically small piece works that earn the labourers very little. In Most cases these people work in farms belonging to other small holder farmers who even sometimes pay then in kind, such as food items and when it's in cash is below the countries minimum wage. Second, most of what is recorded as employment is non-skill labour with people without education recoding a 99 percent employment rate as reported in table 6.24. This is a misleading record in as far as what employment for poverty reduction is concerned. It is therefore not a surprise that, most of the people reported as employed are also found below the poverty line some even below the ultra-poverty line.

7.7   POLICY IMPLICATIONS OF THE STUDY RESULTS ON MALAWI

There is need for the national statistical office to be consistent in the measurement of poverty. The fact that the measure of poverty for IHS 1 was changed to follow a one poverty line for the whole country may have misleading consequences. The country needs to set a reasonable and justified way of measuring poverty so that policies intended to deal with the issue are fed with proper and truthful data. The poverty measure changes notwithstanding, the country has experienced reduction in poverty and such policies that have contributed to the reduction need to be promoted.

On the relationship between fertilizer subsidy and poverty reduction, the study found a significant negative relationship. This has very important policy implications. First, the subsidy program policy needs to be maintained for the foreseeable future until mechanisms are put in place to make sure that farmers have other ways of acquiring the fertilizer, before the subsidy is phased out. The phasing out of the subsidy if not properly done can through back a number of households back into poverty. These families are the ones that have managed to escape poverty by producing and selling agricultural produce helped by the subsidy.

A very important policy implication is discovered in the objective that considered employment as a channel for poverty reduction. Due to a very loose definition that is used in the calculation of employment rates, the country is misled to think that it has very low unemployment rate, The table 6.23 reported in chapter 6 is reproduced here to make the picture clear;

TABLE 7.1 EMPLOYMENT RATE AND UNEMPLOYMENT RATE

	Labour force participation			Employment rate			Unemployment rate		
	Total	Male	female	Total	Male	Female	Total	Male	Female
Malawi	85	83	86	99	99	99	1	1	1
15-24	58	53	63	96	95	97	4	5	3
25- 34	98	98	98	99	99	99	1	1	1
35 -49	99	99	99	100	100	100	0	0	0
50 -64	98	99	98	100	100	100	0	0	0
65 +	90	95	86	100	100	100	0	0	0

Source: Malawi Statistical yearbook 2010: 33

The employment rates reported in the table are above cannot be of a country that has a national poverty rate on 52 percent. It is therefore important as a matter of policy for the definition used in calculating employment figures to be redefined so that efforts are put in place to create quality jobs that will have an effect on poverty.

With the current figures, policy makers would not see the urgency in dealing with employment creation.

7.8   LIMITATIONS OF THE STUDY

The absence of data on poverty for most countries in southern Africa made it impossible to do an international analysis of poverty and growth. It could have been a more academically rigorous venture to extend the analysis done on Malawi to other developing countries with similar economic circumstances. The other challenge was the difference in the calculation of poverty line between IHS 1 and IHS 2 and 3, this made it difficult to compare the poverty rates and hence the study was forced to exclude IHS 1 poverty data from the regression analysis.

7.9   AREAS FOR FURTHER STUDY

There is need to explore the channels of impact on sub-Saharan Africa. The absence of poverty data in these developing countries makes it very difficult to achieve this goal. But with more countries collecting these data a research in this area would reveal a great deal that can help in the focusing of policies that would make a significant impact on poverty reduction efforts.

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Annex A

Distribution of district poverty rate
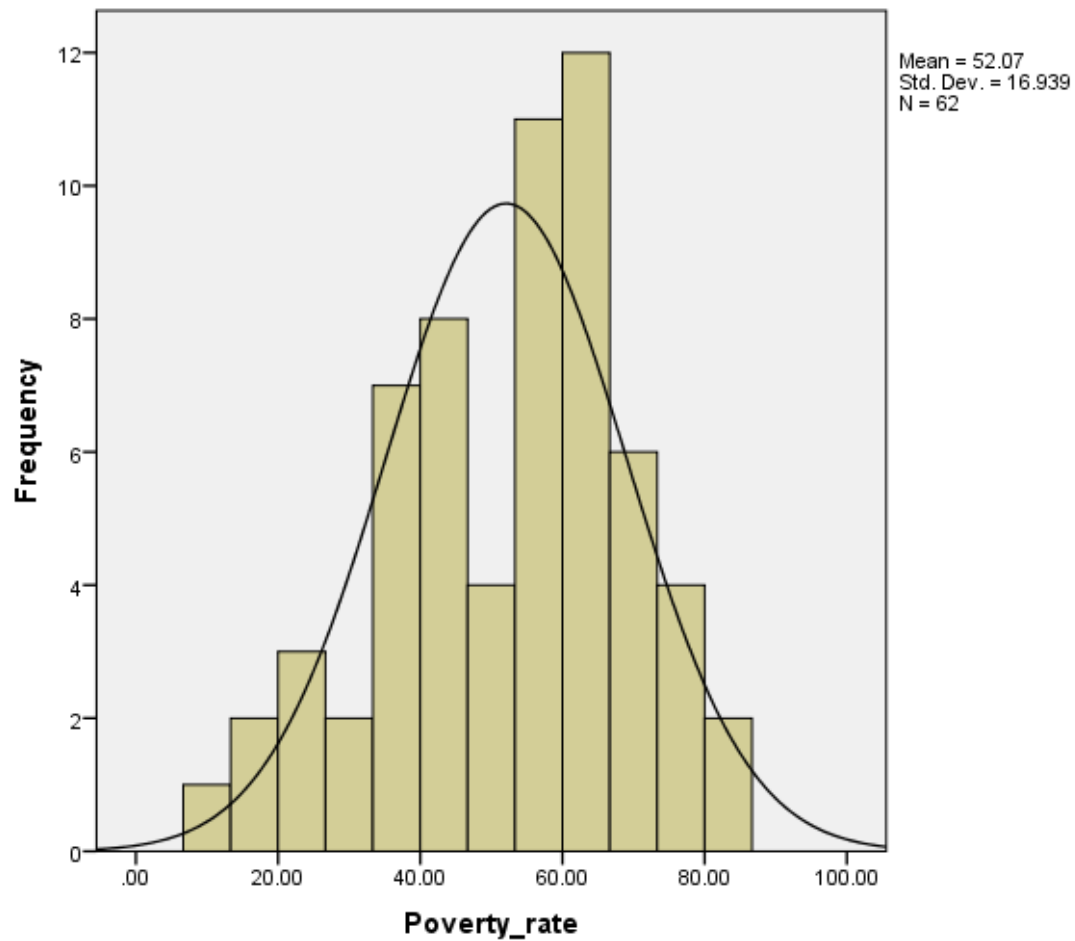
Annex B1

Results of the Breusch and Pagan test for the agricultural production model

Breusch and pagan Lagrangian multiplier test for random effects		
Poverty rate head count (district)		
Estimated results		
	variance	Sd = sqrt (var)
Poverty rate	296.3023	17.213
e	95.24116	9.759158
u	150.6924	12.27568
Test; Var (u) = 0 Chi-bar 2 (01) = 11.66 p-value = 0.0003		

Annex B2

Correlations for the agricultural production variable

	Local Maize production	Input subsidy	Beneficiaries of the input	Maize price	hectors
Local maize productio	1				
Input subsidy	0.7857	1			
Beneficiaries of the subsidy	0.7709	0.9296	1		
Maize price	-0.1696	-0.0787	-0.2048	1	
Hectors	0.7984	0.7489	0.8483	-0.1880	1

multicilinearity is an issue is there is unit (100) correlation between two independent variables (Gujarati, 2009:326).

Annex B 3

Regression results for the Agriclutural production model

Regression results of model 6.3.1

Poverty Rate	Coef.	Std. Err.	z	P - value	95percent Conf. Interval	
Hectare	-.000072	.000	-0.86	0.389	-.00023	.0000
Local maize production	-0.0001	.000	-.0001	0.497	-0.000	0.00001
Input subsidy	-0.0020	.0011195	-1.85	0.06*	-0.0042	.000123
Beneficiary of subsidy	.0000	.0000	0.92	0.357	-0.0000	.00028
Maize price	-0.07412	.2873	-.026	0.796	-.6372748	.48901
constant	65.297275	9.013059	7.24	0.000***	47.62748	82.95802
Wald Chi2 **P- value**	16.48 0.0056***					

*Summarised Output from STATA *** significant at 1percent ** significant at 5percent and * significant at 10percent*

Regression result of model 6.3.2

Poverty rate	coefficient	Std. err	z	P -value	95percent conf. Interval	
Local maize production	-.0003134	.000	-3.46	0.001***	-.0004911	-.0001358
constant	58.88132	3.0948	19.03	0.000***	52.81552	64.94712
Wald Chi 2 P value	11.96 0.0005***					

*Summarised Output from STATA *** significant at 1percent ** significant at 5percent and * significant at 10percent*
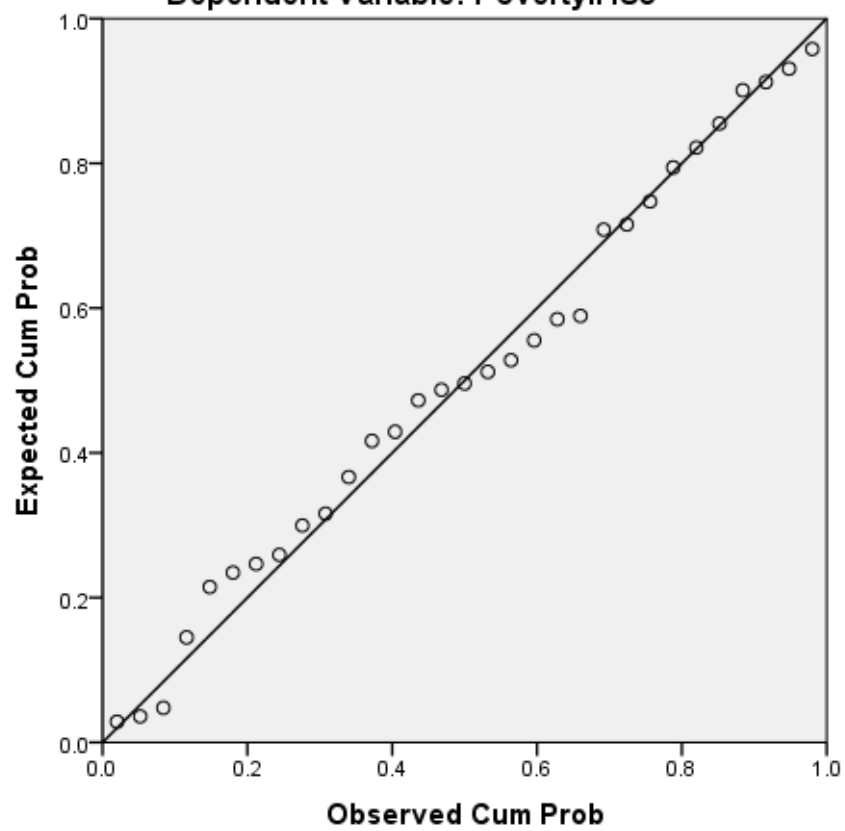
Annex C

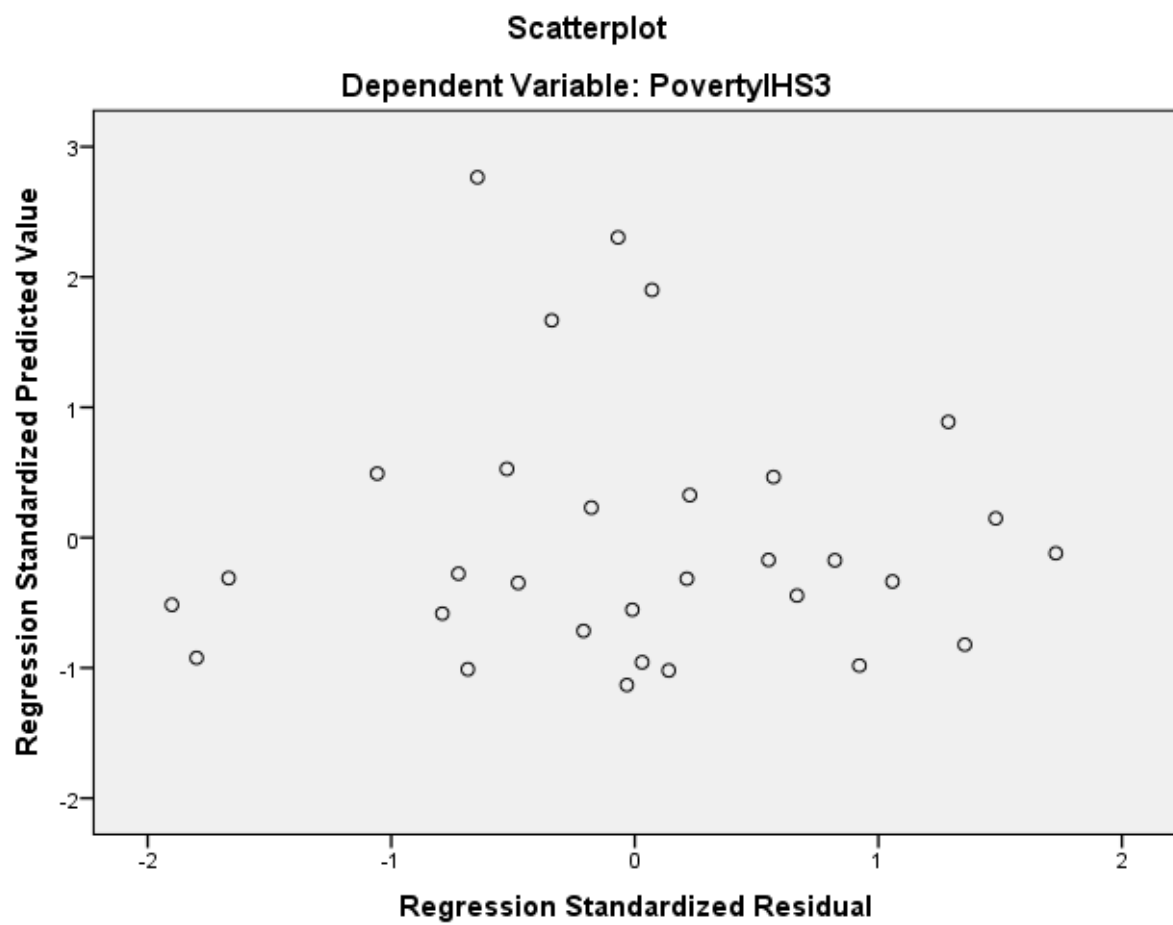**Plots for the regression between Education and poverty reduction**

Plotted residuals to show that the error term is Normally distributed

Histogram

Dependent Variable: PovertyIHS3

Mean = 1.16E-16
Std. Dev. = 0.931
N = 31
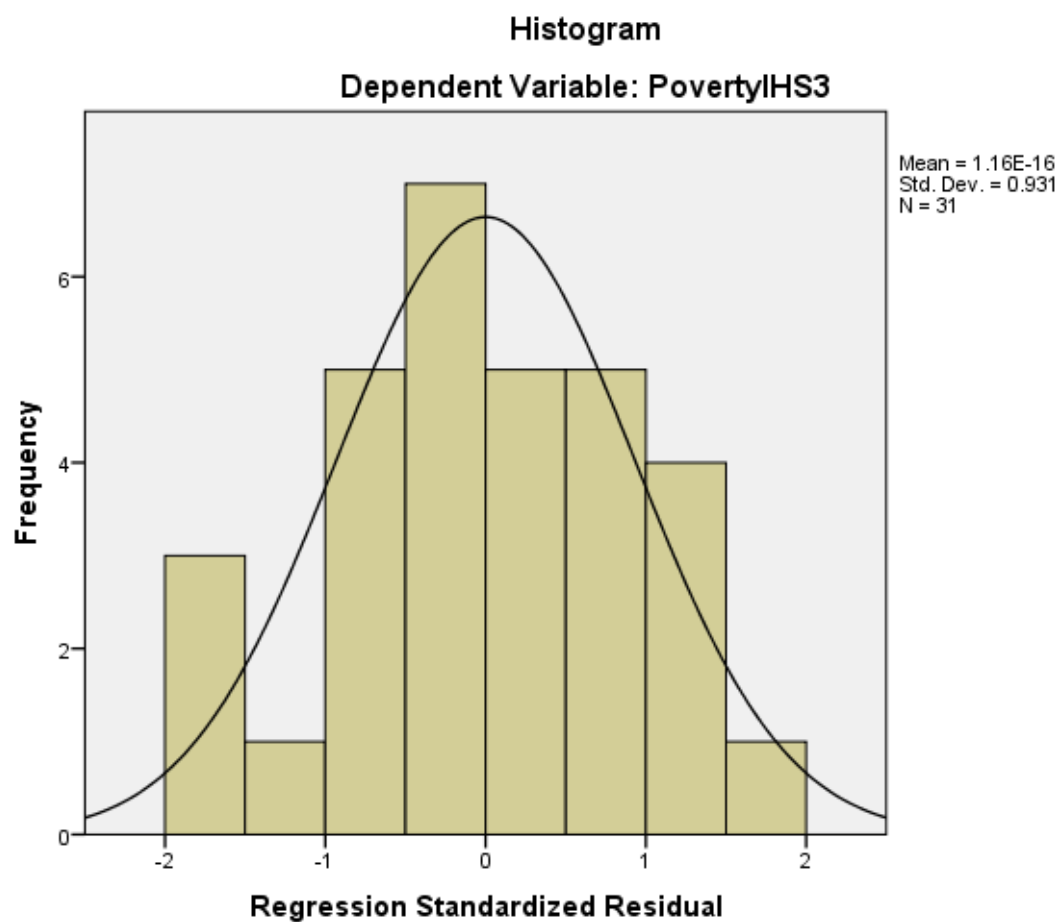
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: PovertyIHS3

Scatterplot

Dependent Variable: PovertyIHS3

Correlations for the independent variables in the education model

Correlations					
	Some education	Secondary JC	Primary	Secondary MSCE	Tertiary
Some education	1				
Secondary JC	.963	1			
Primary	.782	.723	1		
Secondary MSCE	.925	.852	.530	1	
Tertiary	.896	.839	.469	.961	1

TRESULTS POVERTY RATE AND EDUCATION QUALIFICATIONS

Poverty rate as a dependent variable	coefficient	p- value
Primary level	-1.773152	0.059*
Secondary JC	0.6003206	0.625
Secondary MSCE	-0.5604632	0.769
tertiary	-4.92303	0.225
Constant	76.408315	0.000***

*** is significant at 1% ** at 5% and * at 10%

Regression with literacy rate and access to electricity

Poverty Rate	Coef.	Std. Err.	z	P - value	95percent conf. interval	
Literacy rate	-.4021679	.1258569	-3.20	0.001***	-.6488429	-.155493
Access to electricity	-.7835535	.1631827	-4.80	0.000***	-1.103388	-.4637192
Constant	82.49381	8.191181	10.32	0.000***	68.43939	100.5482
Wald Chi2 = 56.20 P-value of the chi2 = 0.000						

***significant at 1percent ** significant at 5percent and * significant at 10percent

Annex D

Access to Loans model

Breusch and pagan Lagrangian multiplier test for random effects		
Poverty rate head count (district)		
Estimated results		
	variance	Sd = square root (var)
Poverty rate	286.9433	16.9394
e	88.52743	9.408901
u	187.8661	13.70642
Test; Var (u) = 0 Chi-bar 2 (01) = 11.92 p-value = 0.0003		

Correlations for the access to loans model

	Loan for agricultural inputs	Proportion of people receiving a loan	Loan for buying land	Loan for Business start-up	Loan for tobacco inputs
Loan for agricultural inputs	1				
Proportion of people receiving a loan	0.1897	1			
Loan for buying land	-0.0842	-0.0084	1		
Loan for Business start-up	-0.5654	-0.4273	0.0952	1	
Loan for tobacco inputs	-0.0168	0.2323	-0.1511	-0.5113	1