Analysis of the determinants of poverty in South Africa

By

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Table of Contents

List of Figures

List of Tables

List of Acronyms

ABET	Adult Basic Education and Training
CA	Capability Approach
CJS	Criminal Justice System
CSG	Child Support Grant
CWP	Community Works Programme
BCG	Boston Consulting Group
DEAT	Department of Environmental Affairs and Tourism
DoE	Department of Education
DPME	Department of Planning, Monitoring and Evaluation
DPRU	Development Policy Research Unit
DTI	Department of Trade and Industry
ECD	Early Childhood Development
EPWP	Expanded Public Work Programmes
FBAE	Free Basic Alternative Energy
FBL	Food Poverty Line
FET	Further Education and Training
GDP	Gross Domestic Product
GEAR	Growth Employment and Redistribution
HIV	Human Immunodeficiency Virus
HSRC	Human Sciences Research Council

IDC	Industrial Development Corporation
LBPL	Lower-Bound Poverty Line
LCS	Living Conditions Survey
LFPR	Labour Force Participation Rate
MPI	Multidimensional Poverty Index
MTEF	Medium Term Expenditure Framework
NCR	National Credit Regulator
NDP	National Development Plan
NPC	National Planning Commission
NER	National Electricity Regulator
NHI	National Health Insurance
NIDS	National Income Dynamics Survey
OECD	Organization for Economic Cooperation and Development
OPHI	Oxford Poverty and Human Development Initiative
PASASA	Paraffin Safety Association Southern Africa
PHC	Primary Healthcare
PPP	Purchasing Power Parity
PSLSD	Project for Statistics on Living Standards and Development
RDP	Reconstruction and Development Programme
RSA	Republic of South Africa
VOCS	Victims of Crime Survey

SAHRC	South Africa Human Rights Commission
SALDRU	Southern African Labour and Demographic Research Unit
SAPS	South African Police Service
SARB	South African Reserve Bank
SHS	Solar Home Systems
StatsSA	Statistics South Africa
TB	Tuberculosis
UBPL	Upper Bound Poverty Line
UHC	Universal Health Coverage
UK	United Kingdom
UNDP	United Nations Development Plan
UNICEF	United Nations Children's Fund
UNODC	United Nations Office on Drugs and Crime
USA	United States of America

Dedication

I dedicate this research dissertation to my family, specifically:

- My late grandparents, may their souls rest in peace.
- My father Eddie Kgaphola
- My mother Rose Kgaphola
- My sister Naledi Kgaphola
- My nephew Kalushi Kgaphola, and

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Plagiarism Statement

I Hlali Kemedi Kgaphola (student number: 442849) am a student registered for MMPP in the year 2014/15. I hereby declare the following:

I confirm that the work I will submit for all assessment for the above course is my own unaided work. I have followed the required conventions in referencing the thoughts and ideas of others. I am aware that the correct method for referencing material and a discussion on what plagiarism is are explained in the P&DM Style Guide and these issues have been discussed in class during Orientation.

I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong. I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to correctly acknowledge the source of the ideas or words in my writing.

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Date: 26 February 2016

Abstract

This research dissertation investigates what factors drive poverty in South Africa using annual data from 1996 to 2013. In an attempt to contribute towards a better understanding of what contributes to poverty in South Africa, the researcher adopted three types of research questions: a contextual research question, a main research question and an applied research question. The central questions of this study was "what drives poverty in South Africa?" and "how do these drivers influence poverty trends in South Africa?" The study recognises poverty as a multi-dimensional phenomenon, in addition to the unidimensional money-metric definition of poverty for analysis purposes. Consequently although the study adopts the monetary definition of poverty as a framework to poverty analysis; it also incorporates other variables that capture the multi-dimensional nature of poverty relevant to the South African context. The study uses various data analysis tools including descriptive statistics, line graphs, bivariate analysis, and trend analysis to investigate the relationship between poverty and the variables in this study. Consistent with Klasen (2000) and Finn et al. (2013), the main findings were that there is a negative relationship between poverty and government expenditure on health, housing, energy, public order and safety, and access to credit in South Africa. On the contrary, government expenditure on education is found not to reduce poverty in South Africa, neither is unemployment found to increase poverty in South Africa. The research concluded that although certain variables are expected to reduce or increase poverty, remedial policy interventions by Government and country specific economic structure mitigate these a prior expectations. From these findings the researcher makes recommendations, contributing to how scholars (and government) can further their attempt to alleviate poverty in South Africa.

Keywords: Poverty and South Africa.

Analysis of determinants of poverty in South Africa

Source: Nicolson, 2015, p. 1.

"Poverty has been created by the economic and social system that we have designed for the world. It is the institutions that we have built, and feel so proud of, which created poverty. It is the concepts we developed to understand the reality around us, which contributed to the creation of poverty, made us see things wrongly, and took us down a wrong path, causing misery for people. It is our policies borne out of our reasonings and theoretical framework, with which we explain interactions among institutions and people that caused this problem for many human beings. It is the failure at the top, rather than lack of capability at the bottom which is the root cause of poverty" (Yunus, 2003, p. 1).

Chapter one: Introduction

1.1. Introduction

South Africa continues to face the triple challenge of inequality, unemployment and poverty. Inequality in South Africa ranges among the highest in the world with a Gini coefficient of 0.65 (World Bank, 2014). The official unemployment rate in the first quarter of 2015 was at 26.4 percent, a 12 year high (Statistics South Africa, 2015a) while more than half of the population live under a dollar a day (World Bank, 2014).

Consequently poverty is one of the major policy challenges in South Africa. However the concept of poverty is a complex phenomenon. "What [poverty] is taken to mean depends on who asks the question, how it is understood, and who responds" (Chambers, 2006, p. 3). Experiences of poverty vary from one individual to another, from one area to another and across time (Govender *et al.*, 2007, p. 118; Makoka and Kaplan, 2005; p. 6; May, 1998, p. 5). There is wide consensus in the international academic debate on poverty and that poverty is a contested and vague concept without a single definition (Qizilbash, 2002, p. 758; Alcock, 2006, p. 4).

The Copenhagen Declaration of 1995 describes poverty as "a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information"*;* it does not depend on income only but also depends on access to social services (World Summit for Social Development, 1995, p. 57). Townsend (1979, p. 31) further articulates that poverty is a situation in which people's means are exceedingly below those demanded by the average household, thereby excluding them from conventional living patterns, customs and activities.

Poverty can be measured using various approaches, for instance the objective approach (which comprises absolute and relative concepts) and the subjective approach or other multidimensional approaches to poverty. The objective approach to poverty involves normative judgments of what constitutes poverty and what is needed to move people out of their impoverished state. The subjective approach to poverty encapsulates asking people whether they (or the households they live in) are poor (Makoka and Kaplan, 2005, p. 8).

While there are several definitions and measurements of poverty, it should be noted that the measurement of poverty in the 21st century has become multi-dimensional. However challenges emerge in trying to analyse poverty along its diverse and numerous dimensions. These challenges include inadequate data or difficulties in measuring the different dimensions of poverty. To facilitate measurement, this study thus adopts the World Bank's Development Reports' (1990, p. 27) definition of poverty. This definition denotes poverty in its unidimensional form: "the inability to attain a minimal standard of living". This "is measured in terms of basic consumption needs or income required to satisfy those needs" (World Bank, 1990, p. 27). In addition a number of variables from the Copenhagen Declaration of 1995 on poverty relevant to the South African context are also considered in the analysis of poverty in this study.

In South Africa several measures have been implemented by government aimed at mitigating poverty, such as (i) *social safety nets*, i.e. social protection schemes like child support grants, old age grants, disability grants, occupational insurance like the unemployment insurance fund; and other poverty alleviation initiatives such as the school nutrition programme and food relief programme; (ii) *job creation* through various initiatives such as national skills development initiatives (i.e. learnerships) as well as the establishment of state institutions such as Khula (an independent agency of the Department of Trade and Industry (dti) that facilitates access to credit (loans) for SMMEs through various agencies such as commercial banks and micro-credit outlets). In essence, Khula provides financial and non-financial assistance to SMME's; (iii) *access to shelter and/or redistribution* like reconstruction and development programme (RDP) housing; (iv) *basic needs* poverty reduction programmes such as free compulsory universal basic education and primary health care; and (v) *triple down effect* programmes contributing to macroeconomic stability such as budget deficit reduction, regulated flexibility of the labour market among others (Mbuli, 2009, p. 134).

However these measures have not yielded desired policy outcomes in South Africa. As at end 2011, 21.7 percent of people were living in extreme poverty, and 37 percent of people were living under the lower-bound poverty lines (LBPL) – those who do not have sufficient income to purchase both food and non-food items. In addition, 53.8 percent of people were living below the upper-bound poverty line (UBPL) – those classified as poor (Statistics South Africa, 2015a, p. 1). Extreme poverty sets a rand value below which individuals (or households) cannot

purchase enough food items to meet their minimum energy intake. The other two poverty lines encapsulate other needs, food items and non-food items. Whilst those living below the LBPL have inadequate funds to purchase both food and non-food items, those living below the UBPL are considered poor despite the fact that they can generally purchase both food and essential non-food items (Statistics South Africa, 2015a, p. 1).

While there is consensus that poverty levels in South Africa have fallen since 2006 (Statistics South Africa, 2014, p. 12-14), there remains inadequate research clearly outlining the reasons for the decline in the number of people living below the three poverty lines, and more specifically the lower-bound poverty line (LBPL). There are only a few papers that make use of the World Bank type of approach of consumption wellbeing, which sees poverty as "the inability to attain a minimal standard of living" (World Bank, 1990, p. 27), whilst also comparing consumption poverty with other dimensions of wellbeing. Notable examples of papers that have followed this type of approach include Leibbrandt and Woolard (1999), Statistics South Africa (2012), the HSRC (2014), Statistics South Africa (2014) and Statistics South Africa (2015a; 2015b; 2015c). However, there remains a gap in the conduct of thorough analysis on the effect of the various dimensions of wellbeing on poverty. This merits further analysis into the concept of poverty in South Africa to further facilitate evidence based policy formulation aimed at assisting with poverty alleviation.

1.2. Problem statement

Despite government's attempts to fight against poverty in South Africa, as of 2011 45.5 percent of the population was classified as poor. This translates to 23 million poor persons (Statistics South Africa (Stats SA), 2014, p. 12). When one examines extreme poverty levels, defined as those living below the food poverty line (FPL), it is revealed that the number of people living below the FPL as of 2011 was 20.2 percent. This translates to 10.2 million poor persons (Statistics South Africa, 2014, p. 12). Immense poverty levels are also evident when examining poverty by making use of the poverty line adopted by the National Development Plan (NDP) – the lower-bound poverty line (LBPL). Using the LBPL, as of 2011, 32.3 percent of the population was living below this line. This translates to 16.3 million people living below the LBPL (Statistics South Africa (Stats SA), 2014, p. 14). The poverty gap for the LBPL in 2011 stood at 11.8 percent. It should also be noted that whilst poverty has declined over the democratic era, poverty remains dominant in certain provinces, notably Limpopo, KwaZulu-

Natal (KZN) and the Eastern Cape (HSRC, 2014, pp. 11, 13, 29, 50, 62 and 63; Statistics South Africa, 2014, p. 31) in no particular order.

Whilst the democratic government has implemented several measures, for example education policy, general pro-poor policies, health policy, and employment policy, aimed at alleviating poverty in the country and creating a better life for all, it can be argued that the tools have not been effective. This argument is premised on the fact that millions of people still remain in poverty 22 years after the political transition; further perpetuating the inequalities in assets, income and exposure to sustainable and life changing opportunities that South Africans have historically been confronted with (HSRC, 2014, p. 16).

Alongside the aforesaid, this study asserts that, regardless of the democratic government's efforts to alleviate poverty, poverty remains one of the greatest societal problems facing policy makers in South Africa. There is thus a need for additional research and analysis of poverty in South Africa and an investigation into why several interventions have not been successful in mitigating poverty levels in the country. This study therefore investigates what drives poverty in South Africa, and how the drivers influence poverty trends in the country. This research will contribute to the knowledge gap in South African-specific research conducted to facilitate informed policy formulation. In application the research will also help inform government in its fight against poverty.

1.3. Research objectives

Emanating from the above issues, the most important objective of this study is to make known what contributes to poverty in South Africa and, in the process, to identify policy tools that could assist scholars in reducing poverty – in turn improving the effectiveness of poverty interventions. The sub-components of this study's objectives are as follows. The first is, to analyse trends in poverty in South Africa. The second is, to identify factors that drive poverty trends in South Africa. The third is, to examine the influence of these factors on poverty in South Africa, and the fourth is to suggest policy recommendations where possible that could help address identified challenges in reducing poverty.

1.4. Research questions

In line with the objectives of this study, three types of research questions emerge. First, there is a contextual research question, which gives the background to poverty trends in South Africa. There then follows two main research questions, which strive to give scholars and policy makers a better understanding of the nature of poverty. And lastly, an applied research question follows, which aims to assist policy makers by suggesting possible new or additional policy foci in their fight against poverty. The details of these various types of research questions follow below.

1.4.1. Contextual research question

The contextual research question is:

What has been the trend in poverty in South Africa?

The contextual research question will aid in giving the researcher's understanding with regards to the trends in poverty over a period of time – enabling her to respond to the main research questions formulated.

1.4.2. Main research questions

The main research questions are:

What drives poverty trends in South Africa?

How do these drivers influence poverty trends in South Africa?

The results obtained from the above two questions could possibly assist scholars (and government) in further research, policy formulation and continuous fight against poverty. In view of that, the researcher has formulated an applied research question.

1.4.3. Applied research question

The applied research question is:

> *Which policies could be implemented to mitigate barriers to alleviating overall poverty in South Africa?*

The suggestions from this question will emanate mostly from the results found in the response to the preceding questions. The results will thus guide the researcher in suggesting one of the possible directions that scholars and government should take, so as to reduce poverty in South Africa.

The following sub-section summarises the research methodology that will be employed in this research dissertation.

1.5. Research methodology

In an attempt to answer the three sets of research questions employed in this study, this research dissertation employs a simple yet comprehensive research methodology. The research dissertation adopts a quantitative research strategy. This research strategy lays emphasis on quantification in the collection and analysis of data, a factor that has been emphasised by Bryman (2012, p. 35). The strategy also places emphasis on a deductive approach to the relationship between theory and research, with importance being placed on the testing of theories. A non-experimental correlational design is adopted. This design is focused on describing and measuring the degree or relationship (or association) between two or more variables (Salkind, 2014, p. 74; Creswell, 2012). As Bold (2001, cited in Williams, 2007. p. 67) notes, the "purpose of a correlational study is to establish whether two or more variables are related [or to establish patterns for two variables]" (Creswell, 2002). The adopted design will thus enable the researcher to respond to the two main research questions. It should however be noted that this design does not examine causal relationships, but only associations, a research phenomenon stressed by Salkind (2014, p. 75).

The study uses official statistics (data that has already been collected by government agencies or other organizations, specifically IHS Global Insight and the South African Reserve Bank (SARB) (SARB, 2015; IHS Global Insight, 2014). The data used in the study range from 1996

to 2013. The main reasons for choosing this period is because this is the period the researcher was able to obtain data points for all the variables used to conduct the study, and the period also represents the post-1994 democratic era in the South African political system.. Earlier and later years were not available for all the variables employed in this study – which would have complicated the analysis procedure. The reader should however take cognizance that time and again reference is made to dates earlier and/or later to the time frame of study.

This research dissertation depends highly on data from the South African Reserve Bank (SARB) and IHS Global Insight. Official data sources such as SARB data, are "generally designed with comprehensive measurement of person or household characteristics in mind", are generally preferred for poverty analysis as sustained by Van der Berg, Louw and Yu (2007, pp. 1 and 20). IHS data "combines different sources of sub-national information [and brings forth the most] relevant data from various sources" (IHS Global Insight, 2015). In addition, HIS "makes use of various models and modelling techniques [i.e. macroeconomic model and labour market model] to provide users with the most reliable and accurate information (IHS Global Insight, 2015). It is for these reasons that the data from these two sources can be deemed as solid sources.

The study adopts various analysis techniques (descriptive statistics, line graphs, cross correlations and trend analysis) to present and analyse the data collected. The inherent advantages is that the study will: 1) have sample data summaries across one variable (univariate) describing what the data shows, 2) be able to compare multiple continuous data sets easily, 3) be able to ascertain whether two or more variables are related, and if so the direction, strength and magnitude of the relationship, 4) where relationships exits, the researcher will be able to validate the existence of such relationships. The ultimate advantage of the various analysis techniques is that they are easy to replicate, review and refine when necessary.

This study makes use of relational hypotheses. This type of hypotheses implies a relation between two or more variables (Cooper and Schindler, 2011, 39). The study thus examines whether there is a positive or negative relation between poverty, as measured by the lower-bound poverty line (dependent variable), and the explanatory variables (health, education, housing and community amenities - herein also referred to as housing, unemployment, household debt to disposable income of households - herein also referred to as access to credit

or financial services, public order and safety - herein now and again paraphrased as safety and fuel and energy - herein sometimes paraphrased as energy).

The data analysis phase (the use of descriptive statistics, line graphs, cross correlations and trend analysis) will ultimately enable the researcher to confirm the relation between the independent variable (poverty) and the explanatory variables. The researcher will thereafter be able to establish which variables, adopted in the research dissertation have a positive or negative relationship with poverty; contributing to the policy recommendations in the conclusions and recommendations chapter (chapter 5).

The main steps (elaborated on in the methodology chapter) followed to conduct this research dissertation correspond with the steps outlined by Bryman (2012) in

Figure **1**.

Figure 1: The process of quantitative research

Source: Adapted from Bryman, 2012, p. 161.

Refer to *section* 3.4. Research procedure used in the current assignment for further details on Figure 1. The next sub-section looks at the significance of the study.

1.6. Significance of the study

It is anticipated that the findings of this study will add value to scholarly research on poverty in South Africa in three specific areas. First, it hopes to add to existing literature on poverty analysis in South Africa by recognising the fact that poverty is an evolving phenomenon with many different dimensions. The study therefore analyses poverty from a more holistic perspective, inculcating both unidimensional and multi-dimensional perspectives using both income and non-income components of living standards. This differs from the two very relevant studies, Klasen (2000) and Bhorat *et al.* (2013a and 2013b). Second, in the process emphasis is laid on variables that are relevant to the South African context and reflective of challenges faced by South Africans in ensuring an acceptable quality in living standards. These challenges include energy shortages, crime, the quality of health delivery systems, challenges in the quality of education and persistently high level of unemployment in South Africa. Third, it will further contribute to suggestions about which policies would be most effective in ameliorating poverty in South Africa, making this study relevant to policy making in South Africa. The next sub-section looks at the limitations of the study.

1.7. Limitations of the study

This research dissertation has a number of limitations. The main limitation of this study is that the researcher was unable to conduct primary research due to time and financial constraints. As a result secondary data was used as opposed to primary survey data. Consequently, the sampling shortcomings of the accessed dataset are not known, as the South African Reserve Bank (SARB) and IHS Global Insight did not highlight the sampling approaches they utilized. Caution therefore needs to be exercised when generalizing the socio-economic indicators.

The advantage of making use of the already available datasets is that the researcher saved on monetary resources and time, thus enabling her to conduct a time and cost effective research. Both sources are publicly available (and the respective links are given in *Appendix B*). It should however be noted that one needs to be subscribed with IHS Global Insight in order to access its data.

A specific limitation in this study is that data availability on relevant variables was a challenge and only a limited number of years' trends were obtained. The limited number of years of the data points obtained further limited the study's methodology. Accordingly, the study had to conduct a trend analysis in the place of a regression analysis which had been the researcher's initial intent.

In the absence of regression analysis this research dissertation is unable to specify and estimate a model to prove causality (what causes change in a variable i.e. poverty) and is unable to prove statistical significance between an adopted explanatory variables and independent variables.

The study is also limited due to extensive reliance on government sources. However, the study is on South Africa which generally keeps good quality data and this assists the researcher with the study's authenticity and validity in terms of having relevance to South Africa's specific country context.

1.8. Conceptualisations

> *"Many people, including academics, campaigners and politicians, talk about the problem of poverty, and underlying their discussion is the assumption that identifying the problem of poverty provides a basis for action upon which all will agree"*
>
> Alcock (1993, p. 3).

From the aforesaid, it is put forward that the meaning of poverty differs from one person to another. Also, the motivation for defining poverty is based on the premise that the concept used to define poverty determines the method used to measure it (Wanka, 2014, p. 7; Mbuli, 2008, p. 12; Makoka and Kaplan, 2005, p. 8). Given poverty's multidimensional nature, it is important that it be defined. Consequently, this section will first define poverty, as it should be understood in the context of this study. This section will then conceptualise concepts that are closely associated with poverty. These concepts will include: poverty lines in absolute terms, in line with the approach adopted in this study, various approaches to poverty analysis and poverty indices by Foster, Greer and Thorbecke (FGT).

Poverty

Poverty in this study is articulated in both its unidimensional form and multidimensional form. It its unidimensional form poverty is "the inability to attain a minimal standard of living measured in terms of basic consumption needs or income required to satisfy them" World Bank's Development Reports (1990, p. 27). This definition is in line with Yemek's (2005, p. 13) definition of poverty specified as "the inability to attain a minimal standard of living... as a result of a number of interrelated factors that create deprivation of basic social needs and vulnerability at an individual and household level." However, as argued by the Oxford Poverty and Development Initiative (OPHI, 2016, p. 1)) "no one indicator alone can capture the multiple aspects that constitute poverty". In its multi-dimensional form poverty is described as "a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information"; therefore, it depends on both income and access to social services (Copenhagen Declaration 1995; World Summit for Social Development, 1995, p. 57). Townsend (1979, p. 31) further articulates that poverty is a situation in which people's means are exceedingly below those demanded by the average household, thereby excluding them from conventional living patterns, customs and activities.

Having conceptualised poverty, the research dissertation then turns to defining the level of welfare that must be attained in order to be classified as non-poor. The different levels of welfare are discussed below.

Poverty line

A poverty line is a threshold that establishes a "minimum socially acceptable standard for a predetermined welfare indicator to separate the poor from the non-poor" (Statistics South Africa, 2015a, p. 3). Similarly Govender *et al.* (2007, p. 124) defines a poverty line as a welfare level below which people are regarded as being poor, either using i.e. the income or expenditure level. Multiple poverty lines (for the most part the food poverty line (FPL), the lower-bound poverty line (LBPL) and the upper-bound poverty line (UBPL)) (Statistics South Africa, 2015a, p. 1) may be used to differentiate between the different intensities of poverty (Coudouel *et al.*, 2002, p. 33). A poverty line is either absolute or relative in nature. An "absolute poverty line is [conceptualised] relative to the level of income [or] expenditure [consistent with] a minimum

standard of living (Statistics South Africa, 2015a, p. 1; Govender *et al*., 2007, p. 124; Makoka and Kaplan, 2005, p. 8). The generally authoritative Statistics South Africa makes use of an internationally recognised approach – the cost-of-basic-needs approach – to produce different poverty lines. The poverty lines along with their definitions follow below.

Food-poverty line

This line assigns a South African "rand value below which [persons] are unable to purchase or consume [sufficient] food to supply them with [the] minimum per-capita-per-day energy requirement for good health" (Statistics South Africa, 2015a, p. 1; Tregenna and Tsela, 2008, pp. 95-96). Currently, this has been estimated to be about 2100 kilocalories (Statistics South Africa, 2015a, p. 1).

Lower-bound-poverty line

This line apportions a South African "rand value below which [persons] are unable to purchase or consume both adequate food and non-food items and therefore [forces persons] to sacrifice food [in order] to obtain [vital] non-food items" (Statistics South Africa, 2015a, p. 1). This study adopts this poverty line as it is the line adopted by the generally authoritative National Planning Commission (NPC) "with regard to its poverty targets "as outlined in the [National Development Plan] NDP" (Statistics South Africa, 2014, p. 14).

Upper-bound poverty line

This line assigns a rand value below which persons "are able to purchase both [adequate] food and non-food items" (Statistics South Africa, 2015a, p. 1).

Poor

For purposes of this research dissertation, the poor should be understood as persons living below the lower-bound poverty line. That is persons unable to consume "both adequate and [essential] non-food items" (Statistics South Africa, 2015a, p. 1).

Objective approach to poverty analysis

This approach "involves normative judgements as to what constitutes poverty and what is required to move people out of their impoverished state" (Makoka and Kaplan, 2005, p. 8).

Subjective approach to poverty analysis

This approach places a "premium on people's preferences" (the extent to which they value goods and services) (as outlined by Makoka and Kaplan, 2005, p 5). Stated differently, in this instance poverty is defined as based on individual perceptions of poverty prominence (Statistics South Africa, 2015a, p. 3; Posel and Rogan, 2013, p. 2).

Multidimensional approach

The multidimensional approach includes poverty measures made up of a number of factors that constitute poor people's experience of deprivation (Oxford Poverty and Human Development Initiative (OPHI), 2015, p. 1). In the case of this study these factors refer to health, education, housing, energy, safety, unemployment and household's access to credit (Klasen, 2000; Finn *et al*, 2013a and 2013b).

The Foster, Greer and Thorbecke (FGT) class of poverty measures is yet another multidimensional measure of poverty. The FGT class of poverty measures comprise of the three indices; headcount index, the poverty gap index and the poverty severity index (HSRC, 2014, p. 21; Van der berg, 2010, p.4; Meth, 2010, pp. 13-15; Haughton and Khandker, 2009, pp. ; Tregenna and Tsela, 2008, p. 99; Govender *et al*, 2007, pp. 125-6; Makoka and Kaplan, 2005, pp. 20-21; Laderchi, 1999, pp. 9-11; Leibbrandt and Woolard, 1999, pp. 42-3). These measures allow one to show a discrepancy of an amount of weight that one puts on the income (or expenditure) level of the deprived members in the general public. Prior to explaining each measure the reader must take note that the poverty measures are decomposable, and that it is possible to detach variations in the FGT measures into an element resulting from rising average incomes, as well as a component resulting from changes in the distribution of income (Haughton and Khandker, 2009, p. 67; Govender *et al*, 2007, p. 126; Makoka and Kaplan, 2005, pp. 20-21; Leibbrandt and Woolard, 1999, p. 42). The three measures follow below.

Headcount index

The "headcount index measures the proportion of the population that is [considered] poor." This measure is common as it is easy to apprehend and quantity. However, this measure does not show how poor those classified as poor are (HSRC, 2014, p. 21; Van der berg, 2010, p. 4; Haughton and Khandker, 2009, p. 67; Woolard *et al*, 2009, p. 2; Coudouel *et al*, 2002, p. 34).

Poverty gap index

The poverty gap index "measures the extent to which [people fall below the poverty line, also referred to as the poverty gap, as a proportion of the poverty line. The summation of these poverty gaps provides the least possible cost of eradicating poverty, if transfers were without a glitch targeted. However, this measure does not reflect variations in inequality among the poor (Haughton and Khandker, 2009, p. 67; Makoka and Kaplan, 2005, p. 20; Coudouel *et al*, 2002, p. 35; Woolard and Leibbrandt, 1999, p. 56).

Squared poverty index

The squared poverty gap index (also referred to as the poverty severity index) averages the squares of the poverty gaps relative to the poverty line (Haughton and Khandker, 2009, p.67; Coudouel *et al*, 2002, p. 35; Ravillion, 1992, p. 39).

Poverty trends

A poverty trend in this study is defined as the fluctuations between the poverty levels in different years, specifically between 1996 and 2013; as done by various studies for instance (Statistics South Africa, 2014; Van der Berg, 2010; Meth, 2010; Govender *et al*, 2007; Van der Berg *et al*., 2006; Makoka and Kaplan, 2005).

Whilst not all the terms are conceptualized here, in this section; where necessary the concepts will be explained in the rest of the research dissertation.

1.9. Structure of the research study

This research dissertation is structured into five chapters:

Chapter one: Introduction. The chapter has just introduced the study. It discussed the situation of poverty in the country and established the rationale for studying the subject matter. The chapter also outlined the problem statement, the objectives of the research dissertation, and the research questions. The chapter then outlined the methodology that will be utilized to answer the research questions. The chapter included a discussion of possible limitations of the study.

Chapter two: Theoretical framework and literature review. The second chapter outlines the theoretical justification that is used in this research dissertation. The chapter also reviews relevant existing literature – internationally and domestically – and provides the various studies' findings.

Chapter three: Research methodology. The chapter discusses the research methodology used in this research dissertation. In detail, the researcher discusses the research strategy, the research design, the research method, the research procedure, the population, the data and stylized facts, data analysis and the criteria for evaluating social research, specifically validity, reliability and replicability.

Chapter four: Data presentation and analysis. This chapter provides the data analysis findings from: the descriptive statistics, the trend analysis, and the cross correlation analysis. The chapter ends by analysing the variables that contribute to poverty eradication along with the variables that do not assist the government in its fight against poverty.

Chapter five: Conclusion and policy recommendations. This final chapter summarizes the findings of this study and makes concluding remarks. Policy recommendations aimed at assisting government in reducing poverty in the country are also laid out.

Chapter two: Theoretical framework and literature review

Poverty is conceptualized differently by different individuals and institutions (Govender *et al.*, 2007, p. 119; Makoka and Kaplan, 2005, p. 6; UNDP, 2005, p. 3). However, development agencies tend to employ quantitative measures of poverty for ease of reference and consistency in global assessments (Makoka and Kaplan, 2005, p 6). It is for this reason that the measurement of poverty, over the years, has been dominated by the objective approach (absolute and relative approaches) which determines the "minimum consumption bundle for food and non-food items essential for survival (Makoka and Kaplan, 2005, p. 8; Statistics South Africa, 2008, p. 33). However, recent poverty studies, view poverty as multifaceted and one of the greatest challenges people in the 21st century (for example Finn, Leibbrandt and Woolard, 2013a, p. 1 and 2013b, p. 1; Makoka and Kaplan, 2005, p.5; Klasen, 2000, p. 1). Consequently international organisations have recently taken serious interest in the subjective measure of poverty (Makoka and Kaplan, 2005, p. 9).

The chapter, based on the analysis and relation of existing knowledge and theories, gives a theoretical review of the key theories and concepts for poverty analysis. The chapter also reviews literature of earlier attempts to establish poverty trends, since political transition, and the link between poverty and other dimensions of well-being in South Africa and globally. Based on the review of existing literature, this chapter also outlines the relational hypothesis of this research dissertation. The chapter is thus structured as follows. Section 2.1 offers the framework for poverty analysis, which provides the lens through which the researcher examines the topic at hand. Section 2.2 and 2.3 examine existing literature, which positions the current study in relation to preceding research and insights (internationally and in the South African context). The sections are followed by a brief conclusion summarising the findings that linked to this study's research objectives. Section 2.4 outlines the study's hypotheses and provides a brief conclusion linking the research dissertations theoretical model to the operationalisation of it through the proposed research methodology. The framework to poverty analysis, emanating from the economics discipline, follows next.

2.1 Framework for poverty analysis

Research has shown that all public policy making inevitably reflects normative positions and should therefore be subjected to critical philosophical reasoning (Nussbaum, 2000, p. 245).

Hick (2012, p. 1) argues that a framework for poverty analysis must "seek to reflect societal and economic shocks in distinctly human terms."

In this regard, a number of different perspectives and approaches to poverty analysis have emerged over time. These include the human development approach, the capability approach and the monetary approach, among others (for instance, Makoka and Kaplan, 2005; Hick, 2012; Alkire and Deneulin, 2009; Laderchi, Saith and Stewart, 2003; Sen, 1999; Greely, 1994; Anand and Ravillion, 1993)

The notion of human development has circulated in policy spheres and public debate for years; with the authoritative vehicle of communication being the United Nations Development Programme's (UNDP's) Human Development Report. Dr Mahbubul Haq was the notable advocate of the human development paradigm, in his effort to see the world's economic and social progress evaluated in a different way, past the common monetary and reconstruction considerations (UNDP, 1990). The Human Development Report seeks to assess the quality of life of a population, with the analysis drawing "upon data regarding health, education, nutrition, work, political freedoms, security, the environment and many other aspects of people's lives" *(*Alkire and Deneulin, 2009, p. 24).

The human development approach is different from the human capital approach (Anand and Ravallion, 1993, p. 133 and p. 136). In the case of the former, material comfort development is "the ends of all life activity like education, [different to the latter in which the] freedom to live the life one values is both the means and ends of development" (Anand and Ravillion, 1993, p. 133, cited in Mackie, 2012, p. 3). For that reason, poverty amelioration is understood in terms of individuals' built realisms instead of an increase of household income which is said to result in direct economic returns in line with the human capital approach (Sen, 1999, p. 90).

Gasper (2002, p. 139) argues that the formation of "poverty reduction policies and understandings from a human development perspective therefore rests upon the granting of developing populations the freedom to become involved [in shaping], to a limited extent, the informational basis of their own development strategies" (Gasper, 2002, p. 139). The human development paradigm is said to have motivated the creation of useful results concerning wellbeing by studying other indicators of poverty and not solely analysing poverty through the

unidemsional lens– for illustration economic growth or the purchasing power parity (PPP) of developing households (Banerjee *et al.,* 2006).

In contrast to the human development approach, the capability approach (CA) focusses on what people are well able to do and be, instead of what they have, or how they feel as maintained by Hick (2012, p. 2). The CA was pioneered by economist and philosopher Amartya Sen in the 1980s. While the roots of the approach can be traced back to, among others, Aristotle, Karl Marx and Adam Smith, Martha Nussbaum later significantly developed the approach. Laderchi, Saith and Stewart (2003, p. 269) argue that the interdisciplinary CA "challenged existing commodity based understandings of poverty such as the human capital approach" as well as the basic needs approach (Fukuda-Parr, 2003, p. 302). Accordingly, the CA rejects the dimension of poverty based solely on income and the artificial maximisation of utility (Laderchi *et al.,* 2003, p. 260; Clark, 2005, p. 11). Instead, the CA says that "social arrangements should primarily be evaluated according to the extent of freedom people have to promote or achieve the plural functioning's they value" (Alkire, 2007, p. 2). Consequently, poverty is "understood from a broadly humanist perspective as the deprivation [in the capability to live a good life]" (Sen, 1995, p. 15).

Sen states that, in examining well-being, we should focus on the quality of life that individuals are actually able to achieve instead of focusing on the 'means of living' such as income (Sen, 2009, p. 233). The central terms in the CA are: functionings, capability and agency. Sen (1999, p. 75) explains that "functionings refer to the various things a person succeeds in 'doing or being' [for instance] participating in the life of society, being healthy [and being educated]". Though functioning's are related to goods and income, "they instead describe what a person is able to do or be" (Alkire and Deneulin, n.d., p. 16) with the good(s) and income and should for that reason be distinguished from the possessions employed to reach them (i.e. possessing a bicycle is distinguishable from 'bicycling'). Capabilities refer to combinations of valuable functionings that a person has substantive freedom to achieve; for example capabilities of health, literacy, political freedom (Sen, 1999, p. 108, 1992, p 587). Agency refers to the "ability to pursue goals that one values and has reasons to value" (Sen, 1999, p. 19).

However the CA frameworks to poverty analysis have been critiqued in various ways. Owing to the unclear theoretic foundations of the capability approach, it is hard to transform into policy. The frameworks criticisms concern "the challenge in operationalizing the broad,

multidimensional, and nuanced aspects of the [paradigms] into reliable policy practice" (Gasper, 2002, p. 436; Fukuda-Parr, 2003, p. 303; Alkire, 2005, p. 116). Another criticism pertains to the practicality of the CA relating to creating interpersonal assessments to well-being (Clark, 2005, p. 6). An additional challenge is the ability to empirically estimate the capability approach using regular economic variables, for instance gross domestic production (GDP). This gives merit to a more quantitative approach to poverty analysis which is easier to quantity and estimate empirically. This study therefore leans more towards the monetary approach (Booth, 1892; Rowntree, 1901) to poverty analysis for the reasons explained above.

Despite the fact the conceptualisation of poverty is growing to take account of non-economic factors, monetary measures continue to be the preferred valuation metric and are consequently the most widely used framework to conceptualizing and measuring poverty in developing countries (Lu, 2012, p. 1; Roaster, 2015, p. 2). As a result, poverty studies commonly measure poverty by "comparing objective indicators of economic well-being ([usually income or] expenditure) with a money metric poverty threshold" (Posel and Rogan, 2013, p. 2). This approach is deemed most relevant, specifically by economists, as income can be considered as a means to "attain basic services, and at a certain point improved well-being of the people results in their ability to work and earn income" (May, 1998, p. 2-3). In addition to this, the measure is stated to be the most influential in influencing policy (Laderchi, 2000, p. 4). Whilst capabilities are indeed crucial, income reinforces their importance. In addition, the idea of basic needs seems to be at the heart of poverty (Oppenheim, 1993, cited in Ikejiaku, 2009, p. 4). It is argued that the lack of income is a typical feature in most explanations of poverty (Makoka and Kaplan, 2005, p.6; Canada Without Poverty, 2015, p. 1). Typically, a person is considered poor if s/he does not have adequate wages to attain basic needs to meet a minimum energy intake (Nicholson, 2015, p 1; Statistics South Africa, 2015a, p. 1). But according to the lower-bound poverty line, that has been adopted in this study a person is classified as poor when they lack sufficient money to obtain both adequate food items and non-food item (Nicholson, 2015, p. 1; Statistics South Africa, 2015a, p. 1).

This preferred framework of poverty analysis, aligns with the adopted narrow conceptualisation of poverty which is founded on the basic needs approach in that an "assessment is made of the minimum expenditure [(or income)] needed to maintain a tolerable life" (Makoka and Kaplan, 2005, p. 7). Thus in "so far as the absolutely poor are concerned, income remains a primary

need of higher rank to many other dimensions that are legitimately argued to be components of human need. Despite the inadequacy of income as a measure of poverty, there is justification for keeping income as our unit of measure[ment] where absolute poverty dictates the primacy of material needs" (Greely, 1994, p. 13).

Laderchi, Saith and Steward (2003, p. 245) affirm that the income approach – a method that comprehends income or consumption as the best possible proxy measure of wellbeing – is preferred for various reasons. The reasons comprise its consistency with neoclassical microeconomic theory and its wide acceptance as a measure on which many policies and much research rely (Roaster, 2015, p. 2; Laderchi, 1999, p. 2). It is also preferred because it emphasizes that income is inevitable for poverty reduction, and the fact that the approach comprises absolute poverty lines where absolute poverty is a fundamental challenge, particularly in South Africa (Deneulin and Shahani, 2009, p. 133). Furthermore, poverty lines are "well-suited for long-term statistical use [on the basis that] they are easy to maintain – in the absence of annual consumption [and] expenditure data" (Statistics South Africa, 2008, p. 9). The poverty lines reflect a universal set of needs and point toward "quantifiable measurement, reproducibility, systematic comparison and validation" (Patton, 1990, cited in Statistics South Africa, 2008, p. 10). So, by combining the income measure with other measures (multidimensional measures comprising some of the dimensions discussed above), the researcher will be able to obtain a holistic measurement and understanding of poverty in South Africa (see also Roaster, 2015, p. 2).

2.2. International perspectives on poverty analysis

Numerous studies on poverty have been conducted globally. This section outlines studies that have researched poverty so as to stimulate the development of the different poverty measures, thereby contributing to poverty-related policy development.

Balestrino (1996) examined whether a sample of formally poor persons indicated whether they were functioning poor, income poor or both. The sample size comprised 281 Italian households, of which 73 households were functioning poor – lacking education, adequate health facilities and nutrition, whilst 71 were income poor and 137 were both functioning poor and income poor. The examination put forward that a substantial percentage of the underprivileged in prosperous societies is essentially not income poor.

Laderchi (1997, pp. 345 and 348) investigated the extent to which an income measure can account for some of the most vital functioning's – namely child nutrition, education and health using Chilean data from 1992. The investigation established that the income variable seems to be an immaterial element for the deficit in the three carefully chosen functioning areas. The Senior Economist's (Laderchi) study asserts that poverty analysis is vastly reliant on the indicators chosen (Laderchi, 1997, p. 345). The study further concludes that the approach to poverty analysis should be kept as broad as possible in the interest of capturing the multifaceted nature of poverty fully (Laderchi, 1997, p. 345).

Phipps (1999, p. 493) conducted an analysis in Canada, Norway and the United States of America (USA), in which the study compared children's well-being from birth until 11 years of age. Phipps made use of equivalent household incomes and 10 functioning areas – accidents, activity limitation, anxiety, asthma, bullying, and disobedience at school, low birth weight, lying, hyper activity and trouble concentrating. Despite the fact the measurement of functioning and incomes provide corresponding evidence, Phillips (1999) study made known that the rankings of functioning's and income are not the same. This indicates that although some similarities are recognized, the overall measure is different.

Chiappero-Martinetti (2000, p. 219) measured five areas of functioning social interaction, psychological conditions, knowledge, education and health at three levels of aggregation. The study used the 1994 Italian household survey to construct a strict mathematical framework referred to as the fuzzy set theory to measure well-being (Chiappero-Martinetti, 2000, pp. 207 and 218). The study concluded that elderly women living alone, blue-collar workers and housewives have poorer function attainments (Chiappero-Martinetti, 2000, p. 230).

Adams and Page (2001, pp. 18 and 19) uses aggregate data from the World Bank to compare the performances documented to each well-being indicator for numerous nation state in the Middle East and North America. The study found an unclear relationship amid a decline in money-metric poverty and an improvement in other well-being indicators.

Balestrino and Sciclone (2001, p. 1) examined the power of the association among income and functioning on a regional assessment of welfare in Italy. Their examination revealed a strong positive correlation exists amongst the functioning-based ranking and income-based rankings (Balestrino and Sciclone, 2001, p. 16).

Alkire and Santos (2014, p. 251) present a first-hand multidimensional poverty index (MPI) for more than a 100 developing countries. The multidimensional index used of one of the Alkire and Foster poverty multidimensional measures and consists of ten indicators corresponding to the same three dimensions (education, health and standard of living) as the Human Development Index (HDI) (Alkire and Santos, 2014, pp. 252 and 260). The new-fangled index makes advancement in measuring poverty globally; and includes more than one dimension. The study finds that the poor identified through the use of the new index are different from those identified by the commonly used income-metric poverty measure. This finding highlights the need for an internationally comparable multidimensional poverty index to complement income poverty measures (Alkire and Santos, 2014, pp. 251 and 266).

From the key studies outlined above, it is evident that the international perspective on poverty analysis has taken the multidimensional direction. This implies that poverty comprises of monetary and non-monetary components all of which impact on the quality of living standards. It is also found that which definition of poverty is used plays an essential part in the measurement of deprivation. This implies that there is no unilateral and fixed definition or measurement of deprivation. Education, health and nutrition are seen as some of the important non-monetary components crucial for uplifting people's living standards. The research dissertation now turns to the relevant South Africa-specific studies on poverty.

2.3. South African specific studies on poverty

Poverty analysis in South Africa has been done from different approaches, comprising monetary studies and multi-dimensional studies. In section 2.3.1 the study provides notable examples of what has happened to income poverty post-1994. These examples aim to provide an academic consensus of poverty trends after political transition, specifically between 1996 and 2013. Section 2.3.2 then offers a summary of multi-dimensional studies conducted in South Africa. This will compare and contrast expenditure-based poverty measures with composite measures of poverty. Notable examples of monetary studies follow below.

2.3.1. Monetary studies

In monetary studies Hoogeveen and Ozler (2004, p. 6) examine income distribution using the Income and Expenditure Survey (IES)/October Household Survey (OHS) 1995 and IES/Labour

Force Survey (LFS) 2000. While the number of people living below the lower-bound poverty line (LBPL) remained the same (Hoogeveen and Ozler, 2004, pp. 5 and 9), the authors found a substantial increase in extreme poverty when applying the $1/day and $2/day poverty lines. The increase in terms of the $1/day poverty line amounted to 1.8 million over the period 1995-2000 and the increase in terms of the $2/day poverty line was 2.3 million over the same period. In addition, the study revealed that the "depth and severity of poverty increased for poverty lines below R322" (Hoogeveen and Ozler, 2004, p. 22). Remarkably, the study states that the rise in poverty is mainly as a result of the increased poverty incidence amongst Africans, as the poverty rates amongst the other racial groups' appear to have declined (Hoogeveen and Ozler, 2004).

Leibbrandt *et al.* (2005, p. 1) make use of the similar datasets as Hoogeveen and Ozler (2004). But, *Leibbrandt et al.* (2005, p. 1) focus on changes in individual real incomes instead of real per capita household expenditures. Leibbrandt *et al.* (2005, p. 4) document substantial declines - a 40 percent drop in real incomes for both genders. The decline in real individual incomes can be explained partly by the changes in the returns to an individual's endowments, the change in the selection into income recipiency (Leibbrandt *et al.*, 2005, p. 37) and the "substantial economic restructuring of the South African economy in which wages were not bid up to keep pace with price changes due to a differentially slack labour market" (Leibbrandt *et al.*, 2005, p. 38;), resulting in an increase in poverty. The study reveals that the young and the non-white borne the heaviest burden of income losses. This further reflected the racial structure of the labour market, which was the direct result of the apartheid ideology (Leibbrandt *et al.*, 2005).

Leibbrandt *et al.* (2004, p. 1) examine income and access poverty using South Africa's 1996 and 2001 censuses. The authors apply two poverty lines, the $2/day line and the R250 per month in 1996 prices (in Statistics South Africa's poverty mapping work). Using the poverty lines the scholars find that money-metric poverty enlarged between 1996 and 2001 (Leibbrandt *et al.* 2004, p. 36). Contrary to Hoogeveen and Ozler's (2004) statement regarding the rise in extreme poverty Leibbrandt *et al.* (2004) maintain that the number of people living below the $2/day poverty line increased by a lesser amount of than modest poverty (defined in terms of the R250 line).

Whilst the studies above suggest that income poverty has increased since political transition (Hoogeveen and Ozler, 2004; Leibbrandt *et al.*, 2005; Leibbrandt *et al.*, 2004). Some papers argue that income poverty has decreased. These studies follow next.

The UNDP (United Nations Development Programme) (2003) examines poverty using the 1995 IES (Income and Expenditure Survey) and the 2002 LFS (Labour Force Survey). The UNDP applies three poverty lines, the $1/day and $2/day poverty lines as well as the R354 poverty line in 1995 rand (which was in line with the UNDP's projected cost of nourishing least possible dietary necessities). The report states that even though the total quantity of deprived persons had grown on account of population growth, the percentage of individuals living in poverty fell from 51.1 to 48.5 percent for the period 1995-2002 (UNDP, 2003, p. 41). Similarly, the headcount ratio – measured on the basis of the $2/day poverty line – similarly declined marginally from 24.2 to 23.8 percent for the same period. However, the headcount ratio using the $1/day poverty line increased from 9.4 percent to 10.5 percent (UNDP, 2003, p. 41). The report reveals that while the extent of poverty seems to have dropped marginally, the depth of poverty increased, mostly when lower-bound poverty line is used.

Van der Berg and Louw (2004, p. 547) utilize the IES 1995 and 2000 (Income and Expenditure Survey 1995 and 2000) to analyse the post-political transition income distribution for the period 1995 to 2000. In addition, the scholars determine average incomes for each ethnic group by means of national accounts and additional sources of data. The authors thereafter apply the mean incomes to the intra-group distributions of revenue contained in the IES datasets. Despite the increase in the number of people classified as poor because of the population growth, the money metric measures of poverty in terms of the poverty headcount make known that poverty seems to have remained same. This finding is consistent even when the R250 per capita per month poverty line (in 2000 rand values) is used (Van der Berg and Louw, 2004, p. 566).

Bhorat and Van der Westhuizen (2010) conclude that poverty incidence had fallen during 1995 to 2005. The authors state "as measured by the headcount rate at a poverty line of R322 a month in 2000 prices, poverty declined by five percentage points, from 53 percent in 1995 to 48 percent in 2005. At the lower poverty line of R174 a month (also in 2000 prices) a similar decline in poverty is evident as the incidence of poverty declined by eight percentage points from about 31 to 23 percent" (Bhorat and Van der Westhuizen, 2010, p. 2). When examining poverty by race, the scholars further reveal that Africans experienced the largest decline in the poverty headcount rate of 7 percent to 56 percent in 2005. Over the same period so-called Coloureds experienced a drop in their poverty headcount rate of five percentage points from 39 to 34 percent. Contrastingly, members of the Asian population group experienced an increase

in their poverty levels, over the same period, of about 8 percent. Positively, their poverty levels remain relatively low in comparison to the other races. A similar decline in poverty is evident, at the lower-bound poverty line of R174 per month (in 2000 prices). Africans experienced a significant decrease of eleven percentage points to 27 percent in 2005; while professed Coloured individuals saw their lower-bound poverty line headcount rate drop from 15 to 12 percent from 1995 to 2005 respectively (Bhorat and Van der Westhuizen, 2010, pp. 2 and 3).

Finn *et al.* (2014) also argue that poverty decreased. Finn *et al.* (2014, p. 4) state that poverty declined sluggishly by two percentage points, according to the poverty headcount ratio; from 1993 (56 percent) to 2010 (54 percent). Using the upper-bound poverty line, poverty also declined by two percentage points from 1993 (72 percent) to 2010 (70 percent) (Finn *et al.*, 2014, p. 4). Finn *et al.* (2014, p. 2) state that the decline is the result of the prompt development of the democratic-government's social support programme. The authors' statement is supported by several other authors' studies including Leibbrandt *et al.* (2010), Leibbrandt and Levinsohn (2011), Bhorat and Van der Westhuizen (2011) as well as Woolard and Leibbrandt (2011).

The poverty gap estimates by race, shows that Africans and Coloureds have seen a substantial deterioration in their average poverty gap levels. Nonetheless, the drop for African individuals, remains the biggest across all ethnic groups. This partially contradicts the findings of Hoogeveen and Ozler's (2004) study. The study maintains that extreme poverty amongst Africans worsened, with about two-thirds of Africans being classified as poor. Then again, they explain that the significant improvements in mean expenditures for Coloureds resulted in a significant decrease in poverty. The Coloureds' poverty headcount dropped by 15 percent in 1995 to 35 percent in 2000, whereas extreme poverty decreased by 8 percent to 12 percent for the same period. Of note, there was no significant change for Asians and Whites.

2.3.2. Multidimensional studies

In terms of multidimensional studies, Kingdon and Knight (2004, p. 2) question to what extent 'basic needs', 'capabilities' to do things one values, and safety from insecurity and vulnerability are measurable. In addition, the paper asks to what extent the concepts (mentioned in the preceding sentence) are competing and/or complementary, and whether it is possible for them to be accommodated within an encompassing framework. The study argues that the use of a subjective well-being approach is less imperfect and/or more quantifiable as a guide to

establishing value judgement. As a result the subjective well-being approach is seen as superior to other approaches, such as the income, basic needs, relative and security approaches. The study develops a methodology for using subjective well-being as a criterion for poverty. The study further illustrates its use by making use of the 1993 Project for Statistics on Living Standards and Development (PSLSD) data, which comprised much socio-economic information on the individual, the household, community and information on the reported subjective well-being. In the illustrative South African case study established in Kingdon and Knight's (2004, p. 21) paper it was found that income and happiness are positively correlated. However, the relationship is not exclusive. Income enters positively and considerably into the subjective well-being function but so do several other variables. The paper maintains that many variables that determine income also determine subjective well-being. However, their effects can differ in relative significance as well as in direction (Kingdon and Knight, 2004, p. 21). The main contribution of the paper is that subjective poverty can indeed be used as an encompassing framework as the concept permits for the quantification of the relevance and importance of the aforementioned approaches as well as their component variables. The study also mentions that the estimated subjective well-being functions for South Africa contains variables corresponding to all four approaches, namely the income, basic needs, relative and security approaches.

Various other scholars (Posel and Casale, 2011, pp. 2 and 13; Blaauw and Pretorious, 2012, p. 179; and Ebrahim, Botha and Snowball, 2013, pp. 168 and 184) used the 2008 National Income Dynamics Survey (NIDS) data and applied a 10-point life satisfaction index. In their study the authors found life satisfaction to be low for blacks, females, household heads, youth, the elderly, those with low educational levels, and so on.

Basarir (2008, p. 1) conducted an empirical study on South Africa 'on the multidimensional measurement of poverty'. The study reveals that the use of unidimensional measures, based on expenditure data, lead to different provincial deprivation rankings than the multidimensional measures. The study thus states that income may not be used to alleviate certain deprivations. Based on this, the author argues that the multidimensional poverty measure should be favoured as multidimensional decomposability is more helpful for policy makers and more pertinent to help obtain definitive insights into the poverty phenomenon. The study further maintains that "having financial power to pay for a service is meaningless if the market for that service does not exist and hence, [the] income-based approach can be misleading" (Basarir, 2008, p. 1)

Klasen (2000, p. 36) used the data from the Southern African Labour and Demographic Research Unit (SALDRU) household survey, to measure and compare expenditure-based poverty and a composite measure of deprivation in South Africa. Klasen built an accumulated deprivation index which comprised 14 components – education, energy, employment, financial services, health care, housing, income, nutrition, perceived well-being, sanitation, safety, transport, wealth and water (Klasen, 2000, pp. 38 and 40). Whilst the study finds a strong correlation between the expenditure measure and the composite measure of deprivation, the study further reveals that the correlation is weaker amongst the poorest South Africans (Klasen, 2000, p. 33). This implies that the two measures identify different South Africans as poor and deprived. This comes as no surprise as the expenditure measure relies exclusively on one important input to well-being as opposed to the deprivation measure which takes a broader approach to measuring poverty. Interestingly, the deprivation measure classifies more Africans, female-headed households, members of smaller households and rural dwellers as more deprived in comparison to those identified as expenditure poor (Klasen, 2000, p. 33). The paper further points out that attention ought to be given to equivalence scales when examining the impact of household size on poverty. Attention should be given to the fact the two measures classify different people as poor and deprived, which may have substantial consequences for targeting and/or policy recommendations (Klasen, 2000, p. 57).

Qizilbash (2002, p. 757) used a strict mathematical framework (referred to as a fuzzy set theoretic poverty measures) to examine vulnerability and definite poverty in various dimensions of the quality of life. The paper's focus was on inter-provincial rankings in these dimensions at the time of South Africa's 1996 census. The analysis reveals that depending on which dimension one focuses on – human or financial poverty (household expenditure poverty measure) – the rankings of provinces changed noticeably. The analysis thus suggests that the distinction between human and financial poverty as well as definite poverty and extreme vulnerability, are critical for policy, particularly with regards to the inter-provincial distribution of funds. The study concluded that looking at household expenditures alone (unidimensional metric) can be highly misleading (Qizilbash, 2002, p. 567).

Basarir (2011) tried to rank South Africa's provinces according to their level of deprivation. Three categories of poverty measures were used in his study, namely the Foster, Greer and Thorbecke (FGT) (1984) family measure, the Anand and Sen (AS) (2003) family measure and

the Alkire and Foster (AK) (2007) family measure. The main finding of Basarir's (2011) paper is that the application of the FGT, AS and AF families of measures yield different provincial deprivation rankings in the South African context, with the differences being less significant amongst the two multidimensional measures (although it is not clear from the paper, the researcher takes the stance the Basarir (2011) could be referring to the FGT and AF family measures). This finding is similar to that found in Klasen's (2000) paper which found that the two measures compared in the paper (a standard expenditure-based poverty measure and a specifically created composite measure of deprivation using household survey data from South Africa) differ considerably in their impact specifically on location (urban and rural).

Finn, Leibbrandt and Woolard (2013, p. 1) affirm that money metric measures have a limited capacity to gauge levels of welfare in society. Their study states that the use of income and expenditure measures can be enhanced by including non-money metric measures so as to inform more focused policy making (Finn *et al.,* 2013, p. 1). The study calculates a multidimensional poverty index (MPI) for each year using data from PSLDS (1993) and the NIDS Wave 2 (2010) datasets. In their study an individual is classified as poor if s/he is deprived in at least one third of the weighted indicators. The study finds that multidimensional poverty in South Africa fell significantly from 1993 to 2010, with the decline in multidimensional poverty being notably higher than the fall in money metric poverty. The study also reveals that better social services and infrastructure have played a large role in terms of multidimensional poverty analysis, however the multidimensional improvements have not translated into notably higher real earnings for the poorer segments of the South African society (Finn *et al.,* 2013, pp. 1 and 7).

Posel and Rogan (2013, p. 6) used data collected in the 2008/09 Living Conditions Survey (LCS) to compare subjective and money-metric measures of poverty in SA. Whilst the authors find a substantial overlap between the subjective poverty status and the money-metric poverty status as measured in terms of per capita expenditure; the scholars also find a number of noteworthy features that distinguish homes where poverty measures do not overlap for example housing type, access to piped water and electricity, access to farming land, household size, the share of children and the elderly in the household, and home ownership. The scholars' findings suggest that expenditure measures fall short in their attempt to capture the multi-dimensional nature of economic well-being as well as that the level of expenditure in the household is

underestimated. Posel and Rogan (2013, pp. 15 and 16) further state that the underestimation may arise because per capita measures do not recognize economies of scale in the household and because the value of economic activities can be difficult to measure, for example in the case of subsistence farming.

Rogan (2015, p. 1), using data from the 2008 wave of the National Income Dynamic Study (NIDS), makes use of the MPI to estimate gender differences across different achievements. The study reveals that the multidimensional gender poverty gap is similar to the poverty gap measured by the traditional money metric poverty measures. Nevertheless, the multidimensional approach yields a narrower poverty gap differential between female and male headed households than the unidimensional approach. The study explores the gender differentials gap further and concludes that the provision of education, health and basic services, particularly in rural areas, do undoubtedly play a significant role in improving the lives of millions of South Africans (Rogan, 2015, p. 1).

In conclusion, it is evident that monetary poverty analysis studies in South Africa have largely focused on examining whether poverty had declined or not. It is also evident that most unidimensional studies were done mostly after the political transition. Thereafter, poverty analysis studies have been multi-dimensional in nature, toning down the central role that income plays in alleviating poverty. This study will include both monetary and non-monetary measures of poverty thereby encapsulating the different approaches to poverty analysis whilst at the same time placing emphasis on a number of monetary indicators of poverty analysis. This approach further aligns with Finn *et al.* (2013) who had argued that the addition of non-money metric measures to income and expenditure measures enhance the quality of poverty analysis and better enables evidence-based policy formulation aimed at alleviating poverty.

2.4 Relational Hypotheses

The review of existing literature, both internationally and domestically, has guided the researcher to formulate relational hypotheses which will be examined in this research dissertation. As explained by Cooper and Schindler (2011), relational hypotheses imply a relation between two or more variables. Based mainly on Klasen's (2000) study and Finn *et al.'s* (2013a and 2013b) study, this research dissertation has formulated the following relational hypotheses; which will examine whether there is a negative relation between poverty measured

by the lower-bound poverty line (dependent variable) and the explanatory variables (education, health, access to credit, housing, safety, energy and unemployment). The relational hypotheses are as follows.

Relational hypothesis 1: There is a negative relationship between poverty and education.

Relational hypothesis 2: There is a negative relationship between poverty and health.

Relational hypothesis 3: There is a negative relationship between poverty and housing and community amenities.

Relational hypothesis 4: There is a negative relationship between poverty and public order and safety.

Relational hypothesis 5: There is a negative relationship between poverty and fuel and energy.

Relational hypothesis 6: There is a negative relationship between poverty and unemployment.

Relational hypothesis 7: There is a negative relationship between poverty and access to credit.

As stipulated in the null hypotheses above, a negative relational relationship is expected between poverty and the explanatory variables. Such a relationship is expected between each explanatory variable and poverty because of the findings of the most relevant papers namely, Klasen (2000) and Finn *et al.* (2013). The findings from the investigation in the stated relationships will respond to this study's main research questions, in turn informing the applied research question.

Through the combination of both monetary and non-monetary measures of poverty – guided by the theoretical lens (the objective approach to poverty analysis) the researcher seeks to conclude which variables can aid scholars in their future research and recommendations aimed at alleviating poverty. This study consequently turns to the explanation of the research methodology that will guide the researcher in determining which variables can reduce poverty in South Africa.

Chapter three: Research methodology

This chapter discusses the research methodology and research design employed in undertaking this study. The chapter also outlines the reasons for the choice of the research methodology and strategy) as well as the research design. The researcher discusses how the data will be collected as well as the possible challenges regarding the data collection. The chapter then concludes with the discussion of the data analysis techniques and the data validation strategies that will be employed in the study. The research methodology and strategy section follows. This section outlines the theory used in this study as well as the epistemological and ontological considerations of this current study. These considerations are included as they are the starting point to the topic at hand, and an understanding of these considerations is important to "defend [my] work against any possible criticism" (Heyman, 2009, pp. 16-17, cited in ResearchMeth, 2016, p. 2).

3.1. Research methodology and strategy

Research methodology is defined as the "general process the researcher takes in carrying out the research project*"* (Leedy and Ormrod, 2001, p. 14). Research strategy, on the other hand, is an approach to social investigation, commonly classified as quantitative or qualitative (Bryman, 2012, p. 35). For purposes of this research dissertation, a quantitative research strategy will be employed. Quantitative research strategy can be understood as a research strategy that emphasizes quantification in the collection and analysis of data (Bryman, 2012, p. 35). This predominately emphasizes a "deductive approach to the relationship between theory and research, in which the [emphasis] is placed on the testing of theories. [It incorporates] the practices and norms of the natural scientific model and of positivism [particularly] and embodies the view of social reality as an external, objective reality" (Bryman, 2012, p. 36). Creswell (2008, p. 4) shares a similar view and expresses quantitative research as a way for testing objective theories by means of probing relations between variables. This method of analysis makes use of assumptions about testing theories deductively, being cautious about "bias, controlling for alternative explanations and being able to generalize and replicate the results" (Creswell, 2008, p. 4). Simply put, quantitative research encompasses the gathering of data with the aim to quantify and subject the information to statistical treatment so that 'alternate knowledge claims' may be supported or refuted (Creswell, 2003, p. 153). This is

different from the qualitative research strategy which "emphasizes words rather than quantification in the collection and analysis of data. This strategy [entails] an inductive approach to the relationship between theory and research, in which the accent is placed on the generation of theories. [It emphasizes] the [ways in which] individuals interpret their social world and embodies a view of social reality as an ever-changing [developing asset] of individuals' creations (Bryman, 2012, p. 35; Creswell, 2008, p. 4). The simplistic though fundamental differences can be summarized as follows in Table 1.

Table 1: Fundamental differences between quantitative and qualitative research strategies

Conceptual and philosophical difference	Quantitative	Qualitative
Principle orientation to the role of theory in relation to research	Deductive; testing of theories	Inductive; generation of theory
Epistemological orientation	Natural science model; positivism	Interpretivism
Ontological orientation	Objectivism	Constructionism

Source: Bryman, 2012, p. 36

Whilst Table 1 summaries the important differences in quantitative and qualitative research strategies, Table 2 outlines in much greater detail the adopted research strategy's – quantitative research strategy – distinguishing features.

Table 2: Quantitative research summary as guideline for the current project

Criteria	Quantitative Research
Purpose	Test hypotheses, examine cause and effect and create forecasts.
Group studied	Bigger and haphazardly nominated
Variables	Particular variables studies
Type of data collected	Quantities and statistics
Form of data collected	Quantitative date established on exact measurements by means of well-thought-out & authenticated data pool tools.
Type of data analysis	Detect statistical associations
Objectivity and subjectivity	Neutrality is important
Role of researcher	Academic & her preconceptions remain unknown to participants in the study, and participant individualities are intentionally concealed from the researcher (double blind studies)
Results	Generalizable results that can be applied to other populations
Scientific method	Confirmatory or top-down: the academic testes the proposition and theory using the data.
View of human behaviour	Regular and probable
Most of common research objectives	Define, clarify and envisage
Focus	Narrow-angle lens; tests a particular hypothesis
Nature of observations	Study conduct in organised situations, separate casual effects
Nature of reality	Single reality; unbiased
Final report	Statistical report with associations, judgements of means and statistical significance of results.

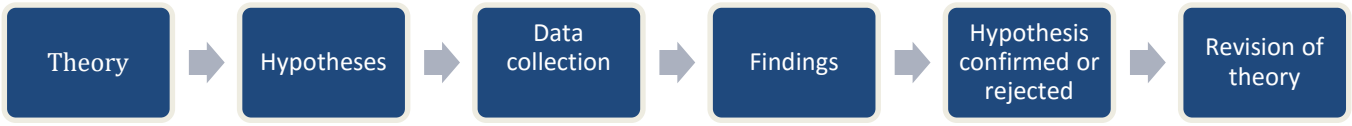
Source: Johnson and Christensen, 2008, p. 34; Litchtman, 2006, pp. 7-8; Creswell, 2014, p. 47; Chilisa and Kawulich, 2012, p. 53.

3.1.1. Deductive theory

This study makes use of the deductive approach to the link amid philosophy and inquiry. This approach is an approach whereby philosophy guides and impacts the research, providing the propositions and guiding the research designs and research approaches of data gathering (Bryman, 2012, p. 24). The deductive approach will be used given that the researcher is already familiar with the setting and wants to confirm or explain phenomena based on several cases (Berg, 2001 cited in Kawulich and Holland (2012, p. 229). Deductive analysis calls for looking

at the study from a general standpoint, then moving to the specific data (Kawulich and Holland, 2012, p. 229). The process of deduction used for this study follows.

Figure 2: The process of deduction employed in this study



Source: Adapted from Bryman, 2012, p. 24.

The researcher will deduce hypotheses based on the critical review of existing literature in the preceding chapter (Chapter two: Theoretical framework and literature review). The hypotheses will then guide the researcher on the type of data essential to either confirm or refute the hypotheses. In the last step, the researcher will make use of inductive theory ("[which] involves the search for pattern from observation and the development of explanations – theories – for those patterns through series of hypotheses*"* (Bryman, 2011, p. 7)) as the academic concludes the implication of the research dissertations results for the notion that encouraged the study.

3.1.2. Epistemological considerations for the current assignment

The epistemological considerations are outlined in this section, in order to sketch how the research dissertation will be conducted and interpreted. The research epistemology, according to Bryman (2012, p. 27) questions what is or should be regarded as satisfactory information in a discipline. In the same way Chilisa and Kawulich (2012, p. 51) states that epistemology questions how we know what we know. This study will make use of a natural science epistemology, positivism (also known as logical positivism). Coined by the French Philosopher Auguste Comte, the positivism term reflects "a strict empirical approach in which claims about knowledge are based directly on experience; it emphasizes facts and the causes of behaviour (Bogdan and Biklen, 2003, cited in Chilisa and Kawulich, 2012, p. 53; Henning, Van Rensburg and Smit, 2004, p. 17). The role of the researcher is restricted to data gathering and analysis through an objective approach, with the research results usually being evident and measureable. Collins (2010, p. 38) notes that positivism as a philosophy "is in accordance with the empiricist view that knowledge stems from human experience. It has an atomistic, ontological view of the

world as comprising discrete, observable elements and events that interact in an observable elements and events that interact in an observable, determined and regular manner". Positivist studies generally adopt a deductive approach (Crowther and Lancaster, 2008). Studies that have adopted the positivist paradigm are thus based on facts and deliberate the world to be external and objective.

Dash (2005, p. 1) explains that positivism "systematizes the knowledge generation process with the help of quantification, which is essential to enhance precision in the description of parameters and the discernment of the relationship among them." In addition, Schoeman and Mabunda (2012, p. 242) explain that the paradigm "asserts that real events can be observed empirically and explained with logical analysis". It is for these reasons that the researcher has adopted this paradigm. The research wants to, with the help of quantification, analyse the variables adopted in this study (explained in section 3.6) and logically explain the reason for them trending as depicted in section 3.3. The constructs being measured in this research are objective and measurable, meeting the ontological consideration (Chilisa and Kawulich, 2012, p. 55). Table 3 offers a summary of the key features of the positivist paradigm.

Table 3: Key features of the positivism paradigm used in this current project

Key features	Positivism
The observer	Must be autonomous
Human interests	Should be unconnected
Explanations	Must determine causation
Research progress through	Hypothesis and inferences
Concepts	Need to be operationalised so that they can be measured
Units of analysis	Should be condensed to simple terms
Generalisation through	Statistical likelihood
Sampling requires	Enormous figures chosen haphazardly

Source: Ramanthan, 2008, p. 40; Chilisa and Kawulich, 2012, p. 54

3.1.3. Ontological considerations for the current project

An ontological issue concerns the question of "whether social entities can and should be considered objective entities that have a reality external to social actors, or whether they can and should be considered social constructions built up from the perceptions and actions of social

actors" (Bryman, 2012, p. 32). Patton (2002 cited in Chilisa and Kawulich, 2012, p. 51) further maintains that ontology "relates to whether we believe there is one verifiable reality or whether there exist multiple, socially constructed realities." Basically, ontology questions what we believe about the nature of reality (Chilisa and Kawulich, 2012, p. 51). Emanating from the adopted research epistemology, the ontological consideration of this study will be concerned with the objectivism and measurability of the constructs being measured in this study. Objectivism is an ontological point that emphasizes that "social phenomena and their meanings have an existence that is independent of social actor (the researcher's interest)" (Bryman, 2012, p. 33; Chilisa and Kawulich, 2012, p. 55)). Based on this ontology, the researcher will be able to discover reality within a certain realm of probability (Mertens, 2009 cited in Chilisa and Kawulich, 2012, p. 55; Ponterotto, 2005 cited in Chilisa and Kawulich, 2012, p. 55).

3.2. Research design of this study

A research design is a structure that directs the implementation of an inquiry technique and the examination of the successive statistics (Bryman, 2012, p. 46). A research design can be seen as the plan to conduct research, which consist of the connection of theory, approaches or analysis and precise approaches (Creswell, 2008, p. 5). Simply put, research designs - sometimes referred to as strategies of inquiry (Denzin and Lincoln, 2011) - are varieties of investigation within qualitative, quantitative and mixed methods approaches that provide precise direction in a research design (Creswell, 2014, p. 41). Research design comprises four key notions: "the strategy, the conceptual framework, the question of what will be studied and the tools to be used for collecting and analysing data" (Punch, 2014, p. 206). These four key components of the research design situate the academic in the realistic world.

There are five prominent research designs are "experimental and related designs, cross-sectional design, longitudinal design, case study design and comparative design" (Bryman, 2012, p. 46). This study takes the form of a non-experimental correlational design. Correlational research "provides some indication as to how two or more things are related to one another" (Salkind, 2014, p. 74). Upon adopting a correlational design, the researcher will make use of the correlational statistic to describe and measure the association, degree, or relationship between two or more variables (Creswell, 2012 cited in Creswell, 2014, p. 41). The research dissertation will thus examine the extent of a relationship between the explanatory variables (*explained thoroughly in section 3.3*) and the dependent variable – poverty (*also explained in*

section 3.3). This research design was chosen as it best suited the research objectives. So, while relationships between and among a number of facts are sought and interpreted to recognize trends and patterns in data, this research design does not go so far in its analysis to establish cause and effect for them. Correlational research does not imply that one variable causes changes in the other variable. Salkind (2014, p. 75) shares the same view stating that "correlation and prediction examine associations but not causal relationships, wherein a change in one factor directly influences a change in another". The researcher thus acknowledges that even though this research dissertation finds a relationship between poverty and the explanatory variables, the relationship will not necessarily be causal. Instead, this study's emphasis is on providing explanations for the relationships between the variables employed in the study and poverty. For that reason the study is classified as explanatory (a study that looks for causes and reasons) giving a novel explanation at first glance and thereafter digging a bit deeper (a process that is also described by Neuman, 2011, p. 40).

3.3. Research method for this research dissertation

A research method is a method for collecting data and can involve a specific instrument, such as secondary analysis and official statistics (as outlined by Bryman, 2012, p 46). This study collects data from official statistics, collected by government agencies, specifically Statistics South Africa or other organisations, specifically IHS Global Insight.

This technique to collecting data was chosen because of several advantages derived by the researcher, over other forms of quantitative data for example data based on surveys (as outlined by Bryman, 2012, p. 320). These advantages include, not spending time on reinventing the wheel and duplicating what has already been done, but instead spending time on innovative data analyses, a less pronounced reactivity problem given that the data is collected by someone other than the researcher herself and lastly, the ability of the researcher to chart trends over time and perhaps relate to wider social changes (Bryman, 2012, p. 321).

3.4. Research procedure used in the current assignment

The main steps followed to conduct this research report have been outlined in Figure 1. Figure 1 displays the overall process which the researcher followed to conduct this study. As illustrated in the figure, the researcher deduced the study's hypotheses from the theory (the reviewed existing literature in Chapter two: Theoretical framework and literature review). Next the

researcher selected a research design (a non-experimental correlational design) on the basis of the research strategy adopted in the study – the quantitative research methodology. Step 4 entails devising measures of the concepts in which the researcher is interested. In this study's instance it refers to the variables used in the study (independent and dependent variables) and the manner in which they will be measured (i.e. exact variable or the use of proxies). The researcher then collected/processed data of all the variables required. The selection of variables was also guided by reviewed existing relevant literature (refer to section 3.6. Data and stylised facts for this study for more information). The collected/processed data was then analysed using various techniques (including simple analysis through Eviews 9, simple line graphs and trend analysis through excel) "so as to reduce the amount of data collected, to test for relationships between variables, and to develop ways of presenting the results of the analysis others" (as discussed by Bryman, 2012, p. 162). At this stage, the researcher interprets the results of the analysis which will result in the development of the findings. From the findings, the researcher is able to either support or not to support the stated hypothesis and to feed knowledge into policy formulation through the writing-up the findings and/or conclusion.

3.5. Population and unit of analysis

Bryman (2012, p. 714) refers to the population as the "universe of units from which a sample is to be selected." Similarly, Pilot and Hungler (1999, p. 37) refer to the population as an "aggregate or totality of all objects, subjects or members that conform to a set of specifications." Burns and Grove (1997, p. 236) maintains a similar view defining population as "the entire aggregation of respondents that meet the designated set of criteria." In this study the population will be South Africans (the residents (and their belongings) throughout the provinces accounted for in all the variables that will be collected).

Units of analysis are "units, cases or parts of social life that are under consideration. They are key to developing concepts, empirically measuring or observing concepts and using data analysis" (Neuman, 2011, p. 69). Similarly Long (2004, p. 1158) maintains that a unit of analysis is the "subject of study about which an analyst may generalize." The unit of analysis in this study is the portion of the population classified as poor (what is meant by poor is thoroughly explained in section 3.6.1. Choice of variables employed in this study).

3.6. Data and stylised facts for this study

Data will be collected through secondary sources from official statistics. The variables to be used in this study will be from the South African Reserve Bank (SARB) and IHS Global Insight. Annual data from 1996 to 2013 will be used in this study. Table 4 summarises the data that will be used, the sources of the variables and how the variables are measured.

Table 4: Sources and definition of variables used in this study

Acronym	Variable	Source	Definition
tlbpl	Lower-bound poverty line	IHS Global Insight	Percentage (%) of people living below the LBPL
totedu	Education	SARB	Government expenditure on education as % of total consolidated government expenditure
u	Unemployment	SARB	Unemployment rate (%)
hlth	Health	SARB	Government expenditure on health as % of total consolidated government expenditure
hd	Financial services	SARB	Household debt to household disposable income (R'm) ratio
hs	Housing	SARB	Government expenditure on housing and community amenities as a % of total consolidated government expenditure
os	Order and safety	SARB	Government expenditure on public order and safety as a % of total consolidated government expenditure
e	Energy	SARB	Government expenditure on energy as a % of total consolidated government expenditure

Source: SARB, 2015; IHS Global Insight, 2014.

3.6.1. Choice of variables employed in this study

The variables chosen in this study are those consistent with the relevant literature, specifically Klasen (2000) and Finn *et al.* (2013a and 2013b). The variables included in this study comprise seven dimensions (excluding poverty) namely: education, health, safety, housing, energy, access to credit, and unemployment. The researcher selected the seven dimensions - education, unemployment, health, financial services, housing, public order and safety and energy - through the guidance of Klasen's (2000) created composite measure of deprivation, comprising 14 components and Finn *et al.* (2013a and 2013b) multidimensional poverty index (MPI) comprising three dimensions, related to nine indicators. Although the researcher had hoped to make use of at least 9 indicators from both sources, the researcher used only seven components

that could be accessed through credible secondary sources. In some cases the researcher had to make use of proxies for the specific variables – details on this follows next.

It may be useful to briefly summarise some key features of the variables that will be employed in this research dissertation. The reason for including each variable in the study and their link to poverty is also detailed in the rest of section 3.6.1. Choice of variables employed in this study. This could further add to scholarly knowledge, which can in turn assist scholars in closing the knowledge gap pertaining to plausible poverty alleviation strategies and/or policies in South Africa in their continuous studies on poverty and poverty alleviation.

Lower-bound poverty level

Poverty in this paper is measured by one distinct poverty line, allowing for statistical reporting of poverty levels and patterns (Statistics South Africa, 2015a, p. 1). Whilst South Africa has three poverty lines, the food poverty line (FPL*)*, the lower-bound poverty line (LBPL) and the upper-bound poverty line (UBPL) (Statistics South Africa, 2015a, p. 1), this study adopts only the LBPL. This line includes non-food items. However, it often requires that individuals and/ or households must sacrifice a food item in order to obtain the non-food item (Statistics South Africa, 2015, p. 1). The use of this measure is consistent with the officially adopted measure of poverty in South Africa (see section 1.8. Conceptualisations).

Government expenditure on education

Education in this study is measured as the total consolidated general government expenditure on education measured in percentages. This variable is included in this study as it is widely argued by various studies that education plays an important role in the reduction of poverty. For instance, human capital theorists, such as Becker (1975, p. 167), Schultz (1963, p. 572) and Mincer (1974, p. 293) argue that investing in education yields skills and credentials which aid higher productivity as well as increase the prospect of getting a higher income in the future (Mbuli, 2008, p. 88). There is also empirical evidence suggesting a strong positive relationship between the level of earning of a person and the level of education the person has achieved (for example, Ngwane, 2001; Van der Berg, 2002; Woolard, 2002; Statistics South Africa, 2014; Woolard and Leibbrandt, 1999). In the case of South Africa Ngwane (2001, cited in Mbuli, 2008, pp. 88-89) reveals that university graduates earned six times higher than people with no

education, whilst primary school completers earned about 10 percent more than people with no education.

In light of this asserted positive relationship between educational attainment and employment in South Africa, it is acceptable to state that the least educated as well as the uneducated are likely to be vulnerable to poverty. For instance, Woolard (2002, p. 3-4) reveals that the poverty incidence is higher among people with no education, incomplete primary education, incomplete secondary schooling and completed secondary education in comparison to those with tertiary education (58 percent, 53 percent, 34 percent, 15 percent and 5 percent, respectively). Leibbrandt and Woolard (1999, pp. 32 and 34) find similar results, revealing strong returns to education in terms of income and poverty avoidance specifically for African households. Statistics South Africa (2014, p. 30) has similar findings, as they reveal that the association between education and poverty appears strong – as reflected by the poverty levels. The lower the level of education attained, the more likely adults were to be poor and to experience more severe levels of poverty. International studies also maintain that education plays an important role in the reduction of poverty. For instance, in Gambia it was found that having a household head that has completed grade 12 decreases the probability of the household to live in poverty and increases the chances of the same household to maintain a higher standard of living (Fanneh *et al.*, 2014, p. 4). Considering the strong linkage between educational attainment and standard of living, the inclusion of total education expenditure by government (used as a proxy for education) is warranted in this study. However, government spending on education does not necessarily guarantee quality education, and the right set of skills required to enter the job market after school.

The rate of unemployment in South Africa

Unemployment is a significant contributor to poverty in South Africa because lack of income makes one incapable of having the means to satisfy or access one's basic needs. Accordingly, "while a situation of unemployment may be considered a problem in its own right, it has been argued that the problem of unemployment lies most particularly in its correlation with poverty" (Dewar and Watson, 1981, p. 10). The official unemployment rate refers to the percentage of the workforce that is unemployed but is willing, able and actively seeking employment. This rate thus only considers people as unemployed only if they have taken active steps to look for a job or to run a business of some sort in the four weeks prior to the interview (Leibbrandt *et*

al., n.d., p. 9). The adopted unemployment measure (also referred to as the narrow definition) therefore does not include the discouraged job seekers – people who want to and are able to work, but have become discouraged (Leibbrandt *et al.*, n.d., p.9). Lack of employment and poverty are said to be correlated in various ways. For example, May (1998, pp. 12-13) upholds that unemployment is a significant contributor to poverty; whilst Fourie (2012, p. 3) argues that "there are indications of a bidirectional causality between unemployment and poverty: unemployment causes poverty, but in turn the condition of poverty contributes to unemployment and its persistence. The implications of such a causality for policy to facilitate access of poor people to labour markets can be very important. This may contribute to the observed phenomenon of unemployment persistence (hysteresis)."

Unemployment has been a severe problem facing South Africa (Contogiannis, 2007, p 42; Kingdon and Knight, 2004a, p. 5; National Planning Commission, 2011, pp. 9-13). Unemployment affects monetary well-being, "production, [and] the erosion of human capital, social exclusion, crime and social instability" (Kingdon and Knight, 2004a, p 16; Kingdon and Knight, 2004b, p. 391; Kingdon and Knight, 2002, p. 2). The unemployment will most likely affect an individual's income and consumption. In order for individuals (or households) to be able to avoid the hardships of poverty they must be able to find employment that pays a decent salary or at least be able to find employment in which people will be able to work for sufficient number of hours so as to be able to stay out of poverty. In addition, it could be argued that the unemployed are to be expected to be deprived as it is not easy for them to sustain an effective purchasing power when their remunerations decline. This impact is heightened in a situation where they lack other income-earning assets. In support of the above relationship between unemployment and poverty there are a few pragmatic studies that reveal that the rate of poverty tends to be more severe among families with unemployed members in comparison to those with employed members. For instance Woolard (2002, p. 13) revealed that the unemployment rate was significantly higher among those classified as poor in comparison to the national unemployment rate (52 percent and 29 percent respectively). It was further revealed that the labour force participation rate (LFPR) was lower among the poor in comparison to the non-poor. However, it must be understood that being jobless does not necessarily imply that a person is poor. This is the case as there are individuals that are frictionally or seasonally unemployed, which is a normal occurrence in any economy. Unemployment becomes a major problem for the individual and her/his family when the breadwinner of the family is unemployed, even if it

is temporary. It is expected that the higher the unemployment rate, the more poor people there will be in the country. This is so because the unemployed do not earn income and as a result may struggle to meet their basic needs.

Government expenditure on health

Health outcomes are both a cause and a consequence of poverty. Health can affect poverty in various ways. However this study highlights only three channels through which health can affect poverty. The first channel pertains to the loss of productivity by the ill. The reasoning behind this channel is as follows. An individual who is not as healthy as s/he should be as a result of illness, is less productive, thus impairing his/her labour participation, and this may further disrupt the person's income-generating capabilities (Mbuli, 2008, p. 85; Shinns and Lyne, 2004, p. 76). Strauss and Thomas (1998, p. 766) support this finding by confirming that a causal relationship exists between health and productivity. Low productivity is viewed as a source of the vicious cycle of poverty as it slows down economic growth and living standards of people in an economy and ultimately leads to increased levels of poverty (Thirlwall, 1999, p. 160). The second channel refers to the financial cost of healthcare, which may affect the poverty incidence of households. Given that the average household depends mostly on wages and/or salaries from labour, lower productivity as a result of sickness may decrease the individual's earnings. This in turn may hinder the ability of people to better manage the health costs of the disease and this may further expose the individuals (and their households) to destitution (Woolard and Leibbrandt, 1999, p. 34; World Bank, 1995, p. 22). The World Bank (1997, p. 64) found that studies in East Asia have shown that 50 percent of financial crises in deprived families are triggered by bacteria, viruses or parasitic infections that cause tuberculosis (TB), human immunodeficiency virus (HIV) and malaria. The last channel relates to the opportunity cost of taking care of a sick person, which can worsen poverty. In this regard, the household often has to make a sacrifice, for example choose between childcare and taking care of the unhealthy. The sacrifice of one aspect for another is most likely to affect the household resources of the less wealthy, thereby causing a shortage in one area or another. In conclusion, it should be noted that healthcare is merely one determinant of health, and that a range of other factors impact on individuals' (or households') health statuses.

Household debt to disposable income of households - financial services (access to credit)

Household debt in this regard refers to liability arising from borrowing money or taking goods and services "on credit" with the intention to pay later (Prinsloo, 2002, p. 63). Household debt comprises two major components namely household credit and mortgage advances, with household credit comprising other subcategories – "open accounts, personal loans at banks, other personal loans, credit card facilities, instalment sale transactions and lease agreements" (Prinsloo, 2002, p. 64). This variable of household debt to disposable income of households is an important analytical tool for poverty analysis as it allows policy makers, analysts, economic researchers and others to evaluate households' financial status and to determine how the households finance their final consumption expenditure (Prinsloo, 2002, p. 63). This variable is included as it enables the researcher to measure the financial pressure households undergo. Rising indebtedness could lead to people living below the poverty line.

Government housing and community amenities expenditure

For purposes of this study, the researcher makes use of government housing and community amenities expenditure as a proxy for housing in South Africa. The variable is included in this study as housing is a significant determinant of well-being and a major asset for many people, potentially cushioning them against the impact of poverty (World Bank, 2011; Moser, 1996). Housing means shelter, space for human development, a base for home enterprise, income from letting out the place or selling; it thus serves as a form of collateral for credit (Bhorat, Poswell and Naidoo, 2004, p. 5; Budlender, 1999, p. 201, May, 1998, p. 12; Moll, 1991, p. 16). Provision of housing by government as a policy intervention can thus assist households to become less vulnerable to poverty, enabling them to reduce their vulnerability and promote their socio-economic development (May, 1998, p. 12).

Government expenditure on public order and safety

Government spending on public order and safety is used as a proxy for crime in South Africa, specifically for this study following the examples of Klasen (2002) and Finn *et al.* (2013). Crime is acknowledged as a preventive to investment in the country, also having an opposing impact on the underprivileged. Amid those countries that provide detailed crime statistics, South Africa reported some of the highest levels of violent crime (United Nations Office on

Drugs and Crime (UNODC), 2002, p. 58). As revealed by both police records and victimisation surveys, crime does not affect people uniformly (UNODC, 2002, p. 58). Whilst the more well-off people "run the risk of becoming victims of property crime, the poor are much more likely to become victims of violent crime, as well as property crime" (Louw and Shaw, 1997, cited in UNODC, 2002, p. 58).

Poverty, high levels of being without a job and downgrading of men rise the hazard of fierceness against women, while deprived women often find themselves imprisoned in abusive relationships because of dependency on spouses for necessities such as food, shelter, clothing and money (May, Woolard and Klasen, 2000, p. 34; Swanepoel, 1992, p. 29). In addition, areas in which most poor people dwell are more likely not to have the necessary infrastructure such as street lighting and proper roads which facilitates crime prevention. Moreover, the underprivileged are less likely to be able to complement the services of police officers by acquiring private security, which the affluent would (Minnaar, 2004, p. 1). Such a situation further perpetuates the likelihood of the poor to be vulnerable to crime. Taking this into account, successful crime prevention is central to the fight against poverty, particularly for the poorest members in society.

Government expenditure on fuel and energy

Government expenditure on fuel and energy is used as a proxy for energy poverty. Based on the expenditure approach a household is considered as energy poor or in energy poverty if the household spends more than 10 percent of its net income on energy (Department of Energy, 2012). This approach makes use of the most common energy poverty indicator which relates to the share of total household income or expenditure that is devoted to energy (Department of Energy, 2012, p. 40). Family units with energy expenditure greater than the threshold (between 10 and 15 percent of spending money income) are regarded as energy poor and are consequently likely to be challenged with tough selections amid meeting energy necessities on the one hand and foregoing further significant opposing spending priorities on the other (Department of Energy, 2012, p. 40). Intrinsically, the indicator is often linked abstractly to the measurement of affordability – which can ultimately be linked to poverty (WHO, 2004, cited in Department of Energy, 2012, p. 40). In addition, Budlender (1999, p. 205) and Bhorat (2004, p. 5) assert that the concept of poverty (or wealth) consists of the level of access to the means of satisfying basic needs as well as access to basic services such as energy for cooking and

lighting, which contribute to the overall psychological and physical well-being of members of a household. It is for that reason that meeting energy requirements is perceived as an essential component of reducing poverty in the country (Hunter *et al.*, 2003, p. 40).

Energy poverty may result in household's well-being being negatively affected by the consumption of polluting and unsafe fuels, and can result in negative income effects because of the excessive time spent collecting their choice of fuel to meet basic needs (Karakezi *et al.*, 2012, p. 168). The use of alternative forms of energy, such as paraffin, candles and wood, may result in injuries such as burns and paraffin ingestions; ultimately affecting the countries overburdened healthcare system (Swart and Bredenkamp, 2012, p. 5 and 7). Therefore, the lack of comprehensive, integrated household energy strategy and policy may represent a key contributor to some of the major indirect factors inhibiting development and perpetuating poverty in South Africa (Swart and Bredenkamp, 2012, p. 1).

Improved access to affordable, cleaner and efficient forms of energy is therefore important to improving the livelihood of those classified as poor. This is the case, as they contribute to building a basis for supporting "job creation, economic growth, agriculture, education, commerce and health" (Karakezi *et al.*, 2012, p. 153). This can lead to improved housing and health conditions which can in turn enable the poor to escape poverty. There is also a need to prioritize access to electricity and energy-using technology for more than just household consumption, for example for commercial activities. This could increase employment prospects of households, as this can contribute to their income generation and the fight against poverty. Access to energy is therefore perceived as an effective tool for combating extreme poverty through increasing food productivity and reducing post-harvest losses (Karakezi *et al.*, 2012, p. 154).

3.7. Data analysis

This study uses very basic techniques for analysing the data collected. This section introduces the various analytical techniques employed in the study.

3.7.1. Analytical techniques used in this study

Firstly, the researcher will make use of descriptive statistics to produce a situation analysis of the national level information of the variables employed in the study. This will be done making

use of a specific measure of central tendency, specifically the mean, minimum and maximum, which when analysed will provide a snap shot of the situation under study.

Secondly, the researcher then makes use of line graphs. Line graphs are usually used to display time series data, such as the data employed in this study. Line graphs will assist the researcher in displaying the relations between two types of information, the variable values by year, thereby illustrating the trends over time (eTA, 2008, p. 2). When plotting time series data in a line graph, the x-axis (horizontal) will contain the categories of time (years in the case of this study – 1996 to 2013), and the y-axis (vertical) will have the frequencies of what is being measured (for example poverty) (as set out by Vanderbilt University, 2010, p. 4).

Thirdly, the researcher makes use of a bivariate analysis. A bivariate analysis, according to Bryman (2012, p. 339) is "concerned with the analysis of two variables at a time in order to uncover whether or not the two variables are related". The technique used for this study is Pearson's r (commonly referred to as correlation analysis). This is a measure of the linear relationship amongst two variables. The correlation coefficient (r) will lie between -1 and 1, indicating the strength of the linear relationship between the two variables. The sign, on the other hand, will show the direction of the association among the two variables (X the explanatory variables and Y the dependent variable). The following interpretations will hold in this study:

$r \approx 1$: A strong direct (positive) linear relationship exists between X and Y. this means that as one variable (either X or Y) increases, the other variable (either X or Y) also increases.

$r \approx 0$: No linear relationship exists between X and Y. In this case, Y will not change as X increases.

$r \approx -1$: An inverse negative relationship exists between X and Y. This means that as one variable (either X or Y) increases, the other variable (either X or Y) decreases.

Lastly, the researcher makes use of a trend analysis. A trend analysis is a statistical procedure performed to evaluate hypothesised linear or non-linear relationships between two quantitative variables (Bautista, 2008, p. 907). This is done through collecting data and attempting to spot a pattern or trend in the two variables sketched.

3.8. Criteria for evaluating social research: validity, reliability and replication

The main preoccupations of quantitative research relate to measurement, causality, generalizability and replication (Bryman, 2012, p. 175).

One of the most important criterions of sound research is validity. Validity is concerned "with the integrity of the conclusions that are generated from research" (Bryman, 2012, p. 47). Validity, according to Gravetter and Forzano (2006, cited in Mentz and Botha, 2012, p. 80), is concerned with the degree to which the researcher is measuring what she says she is. Punch (1998, cited in Roberts *et al.*, p. 43) sustains the same view and states that validity describes "the extent to which a measure accurately represents the concept it claims to measure." According to Bryman (2012, p. 47) the main types of validity that are typically used in quantitative research include measurement validity, internal and external validity and ecological validity. However, according to Roberts *et al*. (2006, p. 43), there are two broad measures of validity – classified as internal and external. Measurement validity is concerned with the question of "whether a measure that is devised of a concept really does reflect the concept that it is supposed to be denoting" (Bryman, 2012, p. 47). This study ensured that all the measures used are valid by making use of either the variable used to measure the concept (by researchers and various departments) or a proxy identified to be valid in measuring the concept. For instance, for the poverty concept the researcher made use of a measure used and constructed by Statistics South Africa (Stats SA) – the lower bound poverty line.

The concern about causality is reflected in the preoccupations with internal validity. Internal validity, according to Roberts *et al.* (2006, p. 43) discourses the causes for the results of the study, and helps to ease other frequently unexpected explanations for these results. This, according to Bryman (2012, p. 176), refers to the "extent to which there is confidence in the researcher's casual inferences." The three approaches to assessing internal validity are content validity, criterion-related validity and construct validity (Mentz and Botha, 2012, p. 81; Punch, 1998 cited in Roberts *et al.* (2006, p. 43); Eby, 1993 cited in Roberts *et al.* (2006, p. 43)).However, it should be noted that this study adopted a non-experimental correlational research design which examines associations, but not causal relationships. By so doing, the researcher has acknowledged that this study is focused on looking for a relation between the independent variable and all the explanatory variables that is not necessarily causal.

External validity is concerned mainly with the issue of generalisation. Generalisation in quantitative research refers to the ability of the researcher to generalise the findings of her study beyond the confines of the particular context in which the research was conducted (Bryman, 2012, p. 47). Black (1999, cited in Roberts *et al.*, 2006, p. 43) further states that external validity "ensures that the 'conditions under which the study is carries out are representative of the situations and time to which the results are to apply. ' "Generalisability, in the case of this study, is not much of a concern for the researcher given that the researcher made use of data that encompassed the whole population (nationwide data).

Replication refers to the ability of other researchers, to replicate (reproduce or repeat) the results/findings of this study. The idea of replication is very close to another criterion of research – reliability. Reliability is concerned with the "question of whether the results are repeatable" (Bryman, 2012, p. 46). In other words, reliability is the degree to which an instrument "measures a construct the same way each time it is used under the same conditions with the same respondents" (Key, 1997 cited in Mentz and Botha, 2012, p. 80). In an attempt to ensure that the measures that are devised for the concepts used in this study (such as poverty and the other explanatory concepts) are consistent and to ensure that other researchers are able to replicate this study, the researcher (in *Appendix B*) provides a summary of the steps that other researchers can follow so as to arrive at the results obtained in this study.

Chapter four: Data presentation and analysis

This chapter focuses on the presentation and analysis of data collected through official statistics. The findings are interpreted in relation to the research questions and the reviewed literature. The data presentation and analysis commences with the use of descriptive statistics, followed by the use of line graphs of each variable employed in this study, and then the use of a cross correlation analysis. The chapter concludes with the analysis of the variables that have been identified to reduce poverty (or that correlate with the reduction of poverty) as well as those identified to not reduce poverty in the South African context.

4.1. Descriptive statistics

This section of the study makes use of descriptive statistics to illustrate how the variables have trended over the sample period of this study. The mean (average), the minimum and the maximum of each of the variables are calculated over the sample period of 1996 to 2013. This study thereafter describes in which year(s) the variables deviated from the mean and in which year each of the variables were the lowest and the highest. This is ultimately done in order to describe the basic features of the data used in this study as well as to provide simple summaries about the sample data. The descriptive statistics, simply put, will describe what the data shows (a function of descriptive statistics enunciated by Trochim (2006, p. 1). The analysis is carried out using Eviews 9 (a statistical package). Table 5 summarizes the descriptive statistics of the variables used in this study.

Table 5: Descriptive statistics of variables used to conduct this study

Variable	Mean	Minimum	Maximum	Observation
tlbpl	46.4	33.8	54.3	18
totedu	19.7	18.1	22	18
u	24	19.3	27.2	18
hlth	10.2	9.3	11.8	18
hd	68.4	52.9	86.4	18
hs	3.6	2.2	4.8	18
os	10.2	11.4	9	18
e	0.43	0.2	0.7	18

Data source: SARB, 2015; IHS Global Insight, 2014.

Note: tlbpl is the total lower bound poverty line, totedu is the total government expenditure on education, u is the unemployment rate, hlth refers to government spending on health, hd is the household debt to disposable income of households, hs refers to government spending on housing and community amenities, os refers to government expenditure on public order and safety and e refers to government spending on fuel and energy.

The total number of people living below the lower-bound poverty line *(tlbpl)* averaged 46.4 percent over the period 1996 to 2013, whilst the minimum and maximum number of people living below the lower-bound poverty line were 33.8 percent (in 2011) and 54.3 percent (in 2003), respectively (results of the researcher). Looking at the data (*refer Appendix A*) it is evident that certain years (from 1996 to 2005) exceeded the average, whilst years 2006 to 2013 fell below the average. The years that registered below average lower-bound poverty line percentages were attributed to a combination of factors such as "above inflation wage increases, expansion of credit and growing social safety nets" (Statistics South Africa, 2014, p. 22). The ability and reach of the social grants to improve the livelihood of the poor were enabled by extending the child grant to accommodate children of the ages 15 and 16 in 2010, as opposed to earlier years (Statistics South Africa, 2014, p. 20). The years that registered above average lower-bound poverty line percentages are the years immediately following the end of the apartheid system. Whilst some studies argue that poverty for the period 1996-2000 had increased (i.e. Hoogeveen and Ozler, 2005), others argue that is has decreased (i.e. van der Berg

et al., 2006). The key common denominator is that the fluctuations experienced were trivial. It can thus be concluded that poverty levels for the period 1995 to 2000 had not changed significantly (Bhorat and Van der Westhuizen, n.d., p. 1).

The total government spending on education *(totedu)* (inclusive of expenditure on educational institutions, education administration as well as subsidies for private entities) averaged 19.7 percent of the total consolidated government spending on education from 1996 to 2013. The minimum and maximum percentage shares spent on education by government over the sample period was 18.1 percent (in 2007 and 2008) and 22 percent (in 1997) (results of the researcher). The years that fell above the average include the 1996 to 2002 and 2011 to 2012 periods. The years that fell below the average include the 2003 to 2010 period (*refer to Appendix A*). Although education remained government's priority area since the onset of democracy, the spending trends depicted may perhaps be attributed to government attempt to solve the unemployment problem (which rose in the second half of 1996) by means of human capital development through investment in training, education and health care (SARB, 1997, p. 7). In addition, the democratic government introduced a school-fee exemption policy, in 2006, which automatically exempted "children whose primary-caregiver [received] a poverty-linked social grant from [paying] school fees" (Branson *et al.*, 2013, p. 1). The trends depicted may also be attributed to the rise in the amount of persons with zero educational expenditure as of 2011, which may have been subsidized by the democratic government (as elaborated by Branson *et al.*, 2013, p. 6). Another reason for the increase in the 2011 to 2012 period may pertain to the rise in Further Education and Training (FET) bursaries for students, between 2007 and 2012, which benefitted students mostly between 2009 and 2011 (Presidency of the Republic of South Africa, 2014, p. 54).

The unemployment rates average was 24 percent for the sample period of 1996 to 2013, and the minimum and maximum rates were 19.3 percent (in 1996) and 27.2 percent (in 2002) respectively (results of researcher). These figures reveal that the South African economy has over the years remained unable to absorb the growing labour force into the economy. Structural unemployment continues to plague the country. The overall unemployment rate has failed to decline over the years, despite the five million jobs that have been created in the past 20 years (since 1994). Whilst 14 million people were employed, 7 million people (equivalent to 36 percent of the labour force) remained unemployed in the country in 2013 (Goldman Sachs,

2013, p. 30). Unemployment was substantially lower in the early years of political transition, particularly in 1996, than it was a decade later. Such a peculiar trend could be attributed to higher labour force participation rates (LFPR) in the years following 1996. Broad labour participation rose from 43.6 percent in 1997 to 50 percent in 1999 (Dinkelman and Pirouz, 2001, p. 9). Low labour force participation rates (LFPR) along with high broad unemployment rates might suggest that there is widespread discouragement among the working age population (Dinkelman and Pirouz, 2001, p. 10). The rapid increase in the rate of unemployment might also be attributable to the decline in the percentage of non-searchers in comparison to the number of the unemployed (as per the broad definition of unemployment). Wittenberg's (1999, cited in Dinkelman and Pirouz, 2001, pp. 10-11) investigation further suggests that as the working age population matures, persons older often exit the labour market by retiring or because of discouragement from search failure (Wittenberg, 1999, p. 19). Other factors affecting motivation for search of employment (contributing to unemployment rates) include: the presence of a pensioner in the household (indicating pension funds are available for consumption), a migrant (indicating likelihood of remittances), household size and the number of dependents taken to be children under the age of 16 as well as location – rural or urban (refer to Dinkelman and Pirouz, 2001, pp. 11-14 for further information).

The deterioration in people's employment prospects may be underpinned by numerous factors, including "increased capital intensity in [various] sectors of economic activity, constrained electricity supply, a mismatch of skills between what employers require and the available skills profiles, labour market rigidities and regulatory aspects (absorption rate has not yet recovered to pre-recessionary levels)", wage cost increases without productivity growth and more specifically slowing growth rates over the 2010 to 2013 period (averaging 2.7 percent) (IDC, 2013, p. 21; Statistics South Africa, 2015b, p. 2).

Notwithstanding the increase in the number of employed persons from 14.6 million in 2008 to 15.1 million persons in 2014, the unemployment rate increased from 22.5 percent (representing 4.3 million people) to 25.1 percent (representing 5.1 million people) (Statistics South Africa, 2015b, p. 3) as a result of new entrants into the labour force. The rates of unemployment are found to be substantially high in both the rural and urban areas. Also, it is found that participation and employment is much higher in urban areas than in rural ones (Banerjee, Galiani, Levinsohn, McLaren and Woolard, 2007, p. 9). Interestingly enough, rural areas have

low levels of labour market participation and employment (Banerjee *et al.*, 2007, p. 10; Dinkelman and Pirouz, 2001, p. 11- 14). Whilst in 1995, the labour force participation rate (LFPR) of Africans was about 45.9 percent with an unemployment rate of 20.1 percent, the African participation rate increased by about 10 percentage points from 1995 to 2005 with the unemployment rate rising to approximately 50 percent (Leibbrandt *et al.*, 2007, p. 26). This shows that the growing labour force was not being absorbed into the economy. Looking at labour market performance by educational attainment, it is found that the unemployment rate for those with matric or less almost doubled from 15.2 percent to 28.2 percent, for the period 1995 to 2005, while persons with less than a matric certificate accounted for 64 percent of the labour market in 2008. (IDC, 2013, p. 28; Statistics South Africa, 2015, p. 4).

The rate of unemployment for individuals with a qualification lower than grade 12 is approximately three times that of a person with a tertiary qualification. The unemployment rate for this group also rose by the biggest portion over the 2008 to 2014 period, namely by 3.3 percentage points (Statistics South Africa, 2015b, p. 3). This finding, though it includes a year outside this study's analysis period suggests that it takes a completed university degree to mostly escape poverty in the country (Banerjee *et al.*., 2007, p. 13; Statistics South Africa, 2015b, p. 3). It has been found that the skills level of the employed workforce has risen since 2000, with people employed with a tertiary qualification having risen from 12 percent in 2000 to 19 percent in 2012 (IDC, 2013, p. 22). By analysing these findings it is evident that the composition of the labour force has changed dramatically since political transition (post 1994, specifically from 1996). *Ceteris paribus* changes in respective unemployment shares of Africans, young people and females alone would have increased unemployment. Such trends reveal the importance of educational attainment in ensuring the employability of current and future generations (IDC, 2013, p. 22; Statistics South Africa, 2015; Branson, 2006).

Government spending on health averaged 10.2 percent of total consolidated government expenditure, for the period 1996 to 2013, whilst the minimum and maximum were 9.3 percent (in 2005) and 11.8 percent (in 2011) of total consolidated government expenditure respectively (results of the researcher). These figures suggest that change has transpired in the country over the period of analysis, particularly in the delivery of health services (DPME, 2013, p. 42). Government spending increased substantially from 2007, the year in which the budget announced the first main budget surplus ever in the fiscal history of the country since 1961. The

"sound management of fiscal policy and a growing economy" therefore created room for increased spending on health (SARB, 2013, p. 7). Government also improved access to healthcare services, through building about 40 percent of the healthcare estate since political transition. Steps were also taken to improve the supply of health care providers since democracy, including mandatory community service for healthcare professionals as well as increasing the remuneration levels for certain professional categories. As a result, as at beginning of January 2014 "44 000 community service health care professionals had been placed in remote, rural and underserved areas" (Presidency of RSA, 2014, p. 55).

In an attempt to try investigate what needs to be done in order to improve the effectiveness of, or perhaps add to, the country's various anti-poverty instruments; the relation between those classified as poor and those who have access to credit is investigated. Household debt to disposable income of households (herein referred to as access to credit) averaged R68.4 million for the period 1996 to 2013. The minimum was R52.9 million (in 2002) and the maximum was R86.4 million (in 2008) for the same period. Although Statistics South Africa (2015) reveals that households in South Africa saw their incomes growing between 2006 and 2011, the households are also "becoming increasingly dependent on debt to [boost] their [purchasing] power" (Statistics South Africa, 2014, p. 21). The credit granted by the National Credit Regulator (NCR) increased significantly between the third quarter of 2009 and the third quarter of 2011 with the value almost doubling from R53.6 billion to R98.9 billion, respectively. Whilst the credit granted enabled households to increase their spending, and in turn, reduce the poverty levels, caution should be taken because should the households (and/or individuals) default on their loan repayments they will automatically fall back below the poverty line.

Government spending on housing and community amenities reached a maximum of 4.8 percent (in 2013) and a minimum of 2.2 percent (in 2004) of total consolidated government expenditure for the period 1996 to 2013 (results of the researcher). The average expenditure amounted to 3.6 percent for the same period. Although complete information on government's housing programme was not yet available in the late 1990s, SARB (1997, p. 95) revealed that progress had been made with the low-cost housing programme. As at the end of June 1997, a total of 658 599 subsidies had been approved and reserved since the political transition. In that period, approximately 30 percent of the targeted one million homes had been achieved, when taking houses under construction into consideration (SARB, 1997, p. 95). Although banks had made

significant contributions to the building of affordable housing and provision of finance to the lower income market, investment in residential buildings rose at a more sedate pace from the second half of 2005 as the affordability of housing declined because of higher prices, rising building costs and increased interest rates for borrowing. (SARB, 2007, p. 17).

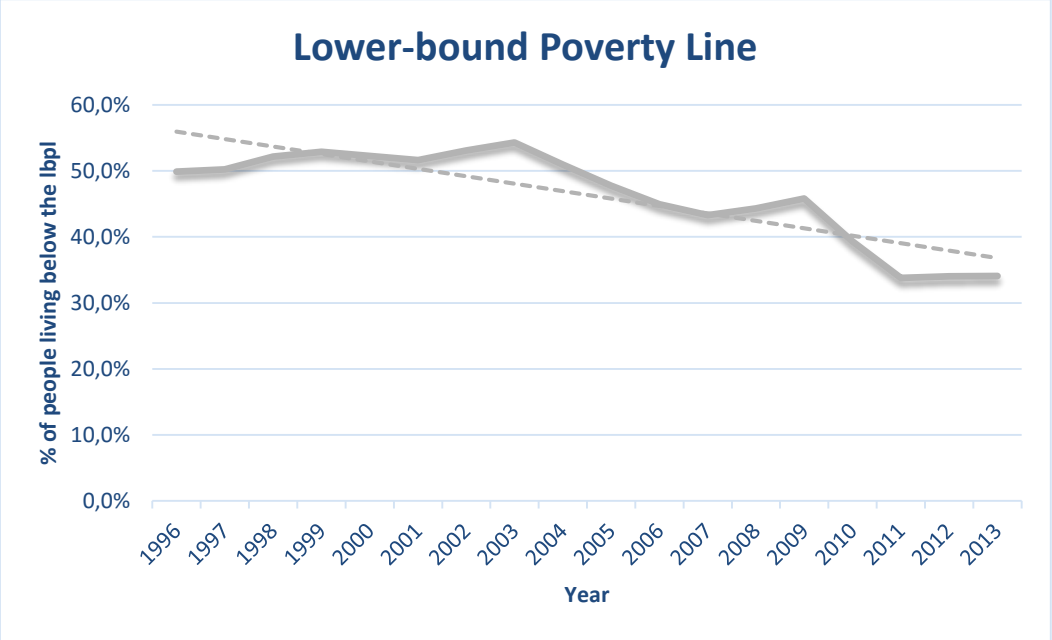
Government expenditure on public order and safety in the country averaged 10.2 percent of total consolidated government expenditure for the period 1996 to 2013. The minimum and maximum value amounted to 9 percent (in 1996) and 11.4percent (in 2011) of total consolidated expenditure respectively for the same period (the results of the researcher). The years that fell below the average are 1996 to 2005 and the years that rose above the average are 2006 to 2013 (*refer to Appendix A*). The rise in government spending on crime reflects steps towards improving the criminal justice system in order to ease crime.

Expenditure on fuel and energy (used as a proxy for energy) averaged 0.43 percent of total consolidated government expenditure for the period 1996 to 2013. The minimum and maximum amounted to 0.2 percent and 0.7 percent respectively for the same period (results of the researcher). The period 1996 to 2004 saw spending below the average spending on fuel and energy, while the period 2005 to 2013 experienced expenditure above the average (*refer to Appendix A*). Expenditure patterns on energy may be attributed to the National Electrification Programme, which achieved impressive electrification levels throughout the country. The Department of Energy (DoE) (2012, p. 1) reveals that national electrification levels were at 87 percent in 2012 compared to 36 percent in 1994. However, a significant proportion of the population remains without electricity, with the national electrification backlog (with growth) reported at about 3.4 million households (DoE, 2012, p. 14). With the high backlog rate, the DoE attempted to implement a Free Basic Alternative Energy (FBAE) scheme, in order to enable the unelectrified informal dwellers to be able to benefit from state subsidies in the same way as the poor electrified households benefit through the Free Basic Electricity (FBE) grant (DoE, 2012, p. iii) . However, the scheme was ineffective (Sustainable Energy Africa, 2013). The expenditure trends may also be attributed to government use of renewable energy. As of 2002, six concessionaires were appointed to undertake the non-grid electrification through Solar Home Systems (SHS) in the identified areas (Department of Environmental Affairs and Tourism, 2005, p. 12).

4.2. Line graph analysis on the variables employed in this study

This section examines the trend of each of the variables over the period 1996 to 2013. The figures that follow show the trends for the independent variable poverty –*tlbpl* and all the explanatory variables namely: education – *totedu*, unemployment – *u*, health – *hlth*, access to credit – *hd*, housing – *hs*, safety – *os* and energy – *e*. It should be noted that whilst the analysis of trends examine the progress since 1996 the analysis will include reasoning from 1994, in particular instances. This is done as the researcher was only able to attain all the variables data points for the 1996 – 2013 period.

Figure 3: Lower-bound poverty line (LBPL)



Data Source: IHS Global Insight, 2014.

Figure 3 reflects South Africa's long term declines in poverty levels, from 1996 to 2013. According to the poverty trends publication, poverty as measured by the lower-bound poverty line declined from 42.2 percent in 2006 to 32.3 percent in 2011. These figures translated to 20 million and 16.3 million people respectively (Statistics South Africa, 2014, p. 14). Figure 3 also depicts that the number of people living below the LBPL has declined steadily since 2003. This decline since 2003 is taken to be the accumulated outcome of the rollout of basic and social services since democracy in South Africa which has considerably enhanced the lives of many

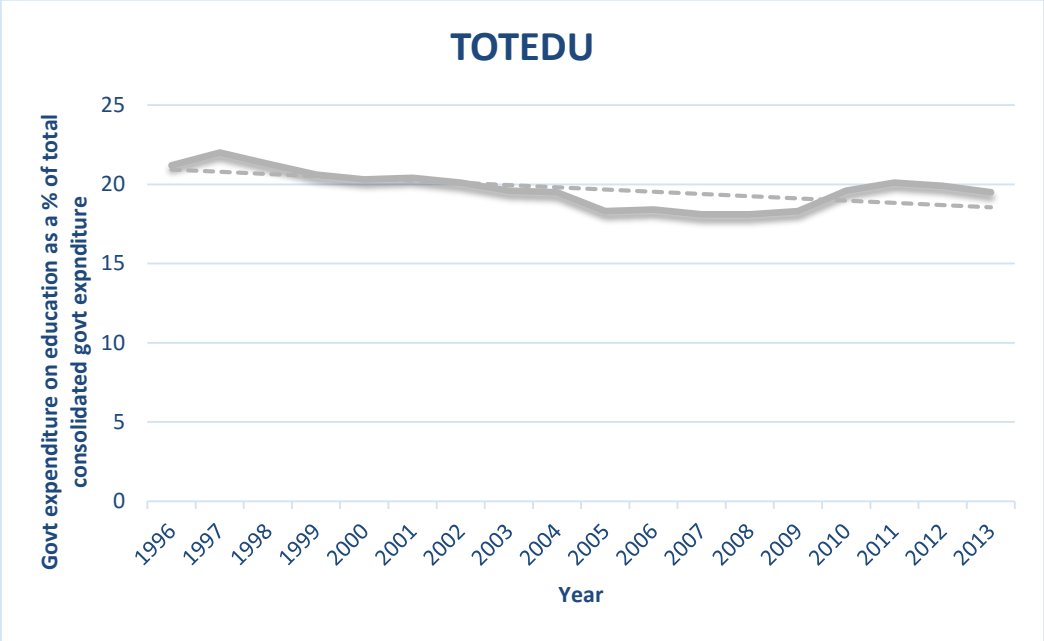
of South Africans, with noteworthy improvements in the delivery of water, sanitation, electricity and housing, says Statistics South Africa (2014, p. 8) and DPME (2013, p. 26).

Improved access to social security, including social assistance, has in all probability played a significant role in reducing the high poverty levels. Social assistance provision epitomizes the reallocation of resources to the poor and remains a notable poverty alleviation programme. Social assistance programmes have grown significantly from assisting roughly 2.7 million people in 1994 to over 16 million in 2014. Accordingly, South Africa spent close to 3.1 percent of GDP on social grants in 2014 (DPME, 2015, p. 32).

The provision of Extended Public Work Programme (EPWP) has also played an integral part in creating low-level employment opportunities and therefore helped reduce extreme poverty in South Africa. According to the generally respected Department of Planning Monitoring and Evaluation (2015, p. 25), the 2013/14 financial year witnessed the creation of "more than one million work opportunities" through the EPWP. The Community Works Programme (CWP) also continues to be steadily implemented as part of public employment programmes. According to the DPME (2015, p. 26) CWPs have grown considerably over the period of analysis with more than a three-fold growth in four years (DPME, 2015, p. 26).

Steps taken to improve Government's efforts in providing the poor with homes has also played a critical role in reducing poverty in the country. Improved health status (for example "increased life expectancy by 9 years from 52 years in 2004 to 61 years in 2014" has played a significant role in improving the quality of life of households. Combating the high levels of crime (for instance reducing the number of serious crime reporting's from more than 5 000 to 3500 per 100 000 population) has also played an immense role in improving households quality of life (DPME, 2015, p. 4). It should however be noted that some of the noted improvements are highly uneven and questionable. Such discussions are outlined in the following sub-sections, throughout this chapter.

Figure 4: Government spending on education

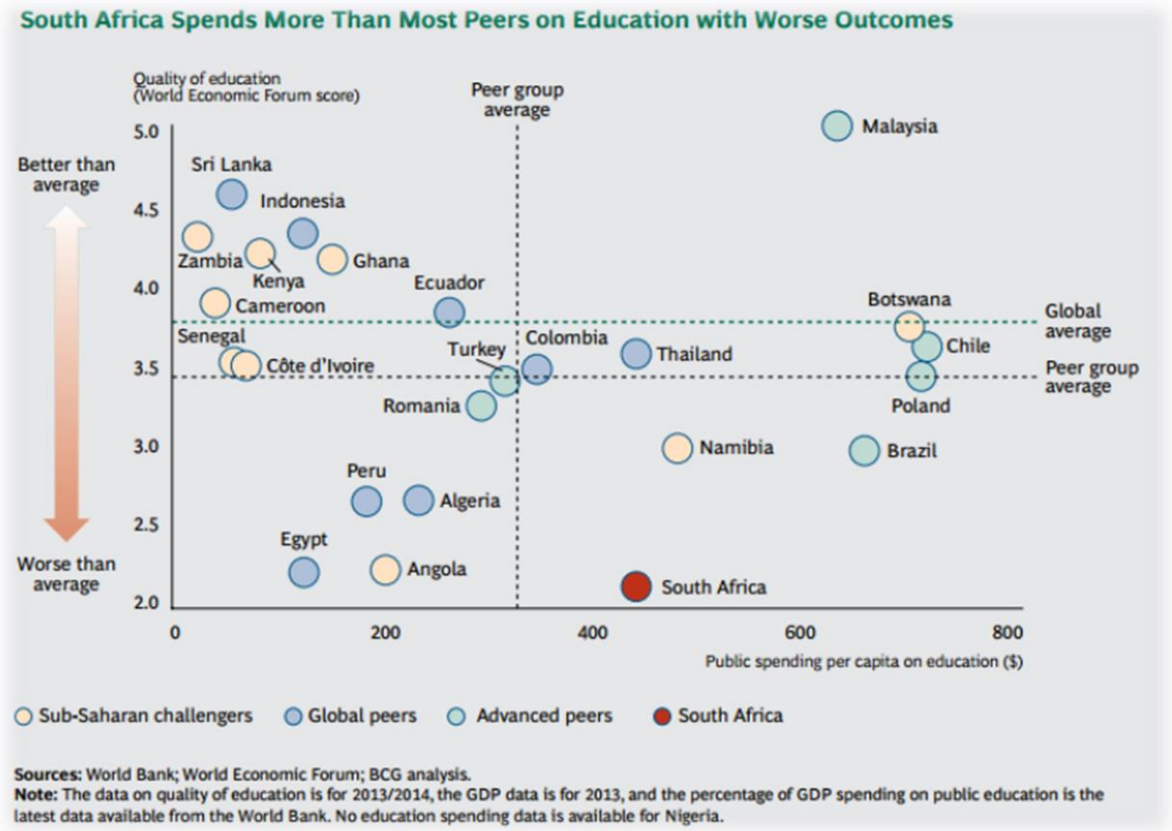


Data Source: SARB, 2015.

Figure 4 graphically demonstrates government spending on education for the period 1996 to 2013. The graph depicts that government spending on education encountered a brief sharp increase in the years immediately following the initial period of political transition, followed by a decline from 1997 until 2008, followed by another increase thereafter.

In 2010/11, government spending on education was the largest single line item in the budget, reaching roughly 20 percent of the budget and 6 percent of GDP. But, the vast majority of the education budget (78 percent of the 20 percent) went to personnel expenditures, particularly teacher salaries (Spaull, 2012). Overall, public spending on education in South Africa has remained significantly high, fluctuating between 18 percent and 23 percent total (% of government expenditure), throughout the period of analysis. According to the South African Reserve Bank (SARB, 2015), total government expenditure on education in South Africa was measured at 19.5 in 2013 (TradingEconomics, 2016).

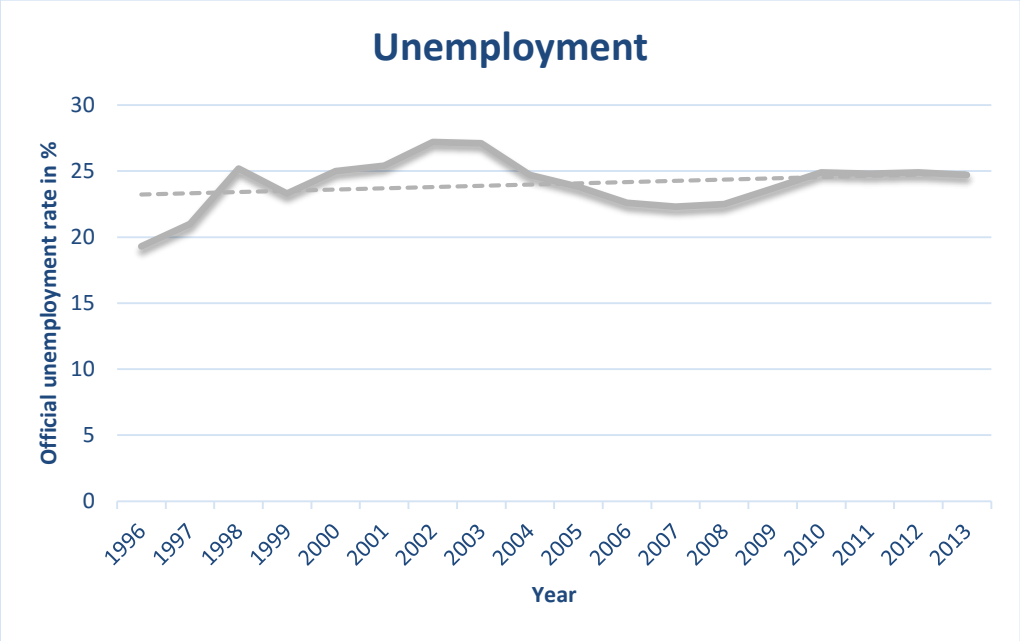
Figure 5: South Africa spends more than most peers on education with worse outcomes



Source: BusinessTech, 2015

In addition to the aforementioned details, Figure 5 shows that South Africa spends more money than most of its peers on education. Unsurprisingly, education received the biggest share of total consolidated government spending for the period of analysis compared to the other variables included in this study (results of researcher's analysis). Nonetheless, South Africa ranks worst with regards to quality of education outcomes as per the World Economic Forum score (BusinessTech, 2015). That said, Boston Consulting Group (BCG) maintains that "four priorities [require] leadership for South Africa's future [namely:] teacher quality, teaching basic skills, reducing dropout rates and effective vocational-training alternatives for young people" (BusinessTech, 2015). This study supports the same view.

Figure 6: Unemployment rate in South Africa



Data Source: SARB, 2015.

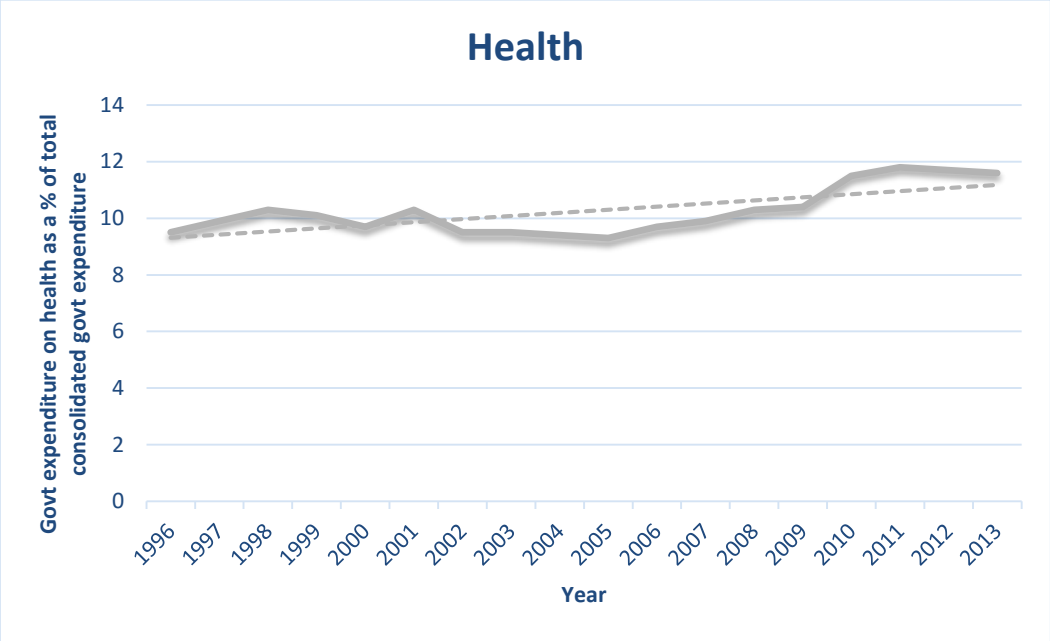
Figure 6 graphically represents South Africa's official unemployment rates (as per the narrow definition) for the period 1996 to 2013. The unemployment rates are illustrated to have been high throughout the period of analysis, with the rate fluctuating around 25 percent with no significant decline (see section 4.1. Descriptive statistics for more details on the fluctuations).

Unemployment in South Africa largely affects the young, unskilled and African citizens. Viegi (2015, p. 3) argues that its dimension and persistence is a source of uncertainty and instability. This phenomenon has generated a large academic and political literature. Bhorat (2004) states that the possible causes of unemployment in South Africa comprise "output [and] employment, [labour force participation] LFP growth rates, labour demand-supply mismatch, the role of trade unions [and] bargaining councils, labour regulation and the nature of economic growth. Viegi (2015, p. 3) adds skilled biased technical rigidities of wages due to bargaining institutions, increase in capital intensities and relatively high reservation wages. Another contributory factor to the high unemployment rate has also been the slow employment growth, which has been below real GDP growth in most sectors for the period March 2007 to March 2013 (Statistics South Africa (StatsSA), 2015c, p. 35). In addition, Banerjee *et al.* (2007, p. 4) maintain that the changes in unemployment may be as a result of "either a temporary shock or a more permanent

structural change. Much of this increase [came] in the form of a [significant] influx of African women in the labour market" (Banerjee *et al.*, 2007, p. 2; Bhorat *et al.*, 2013, p. 11). Therefore, the rise in supply alongside with the decrease in the demand surely increased unemployment. In the main, the study finds that most of the reasons for the rise in unemployment in the post-apartheid regime are structural in nature for instance the legacies of the education system and decline in agricultural and mining employment. Even with the extensive amounts of work opportunities the EPWP has created, the employment created remains little in comparison to the number of unskilled unemployed individuals. Even so, some credit is due to public employment programmes as they have been important income-supporting programmes, particularly for women, the youth and people with disabilities (Presidency of South Africa, 2014, p. 47).

Whilst the rise in unemployment is likely to lead to an increase in the amount of persons classified as poor, in the South African context the impact of unemployment on poverty has not been as severe as one would expect. This is probably because of government's extensive social protection schemes along with the public work programmes which have played a role in reducing the effect of unemployment on the poor. It should however be noted that in certain instances it has been government actions that has hindered progress. There is therefore a need for a "long-term and independent view – which will add impetus, focus and coherence –to address the key challenges facing [South Africa]" (National Planning Commission, 2011, p 1).

Figure 7: Government spending on health in South Africa



Data Source SARB, 2015.

Figure 7 above graphically illustrates the trend in total consolidated government expenditure on health in South Africa. Whilst the sustained rise in government spending on health could imply a transformed health system with redressed historical inequities this is not necessarily the case. Instead, massive shortcomings still remain. Table 6 summarises the principal accomplishments and shortcomings of health care in the country post-1994 until 2010 (refer to section 4.4.1. Variables that reduce poverty in South Africa health trend analysis for more scholarly critiques).

Table 6: Principal accomplishments and shortcomings of health care in South Africa

Accomplishments	Shortcomings
Legislation and gazetted policy	**Insufficient prevention and control of epidemics**
- Free primary health care	- Limited effort to curtail HIV/AIDS
- Essential drugs programme	- Emergence of MDR-TB and XDR-TB
- Choice of termination of pregnancy	- Lack of attention to the epidemic of alcohol abuse
- Anti-tobacco legislation	**Persistently skewed allocation of resources between public & private sectors**
- Community service for graduating health professionals	- Inequitable spending patterns compared to health needs
	- Insufficient health professionals in public sector

Accomplishments	Shortcomings
Better health systems management	**Weakness in health systems management**
- Great parity in district expenditure	- Poor quality of care in key programmes
- Clinic expansion and improvement	- Operational inefficiencies
- Hospital revitalisation programme	- Insufficient delegation of authority
- Improved immunisation programme	- Persistently low health worker morale
- Improved malaria control	- Insufficient leadership and innovation

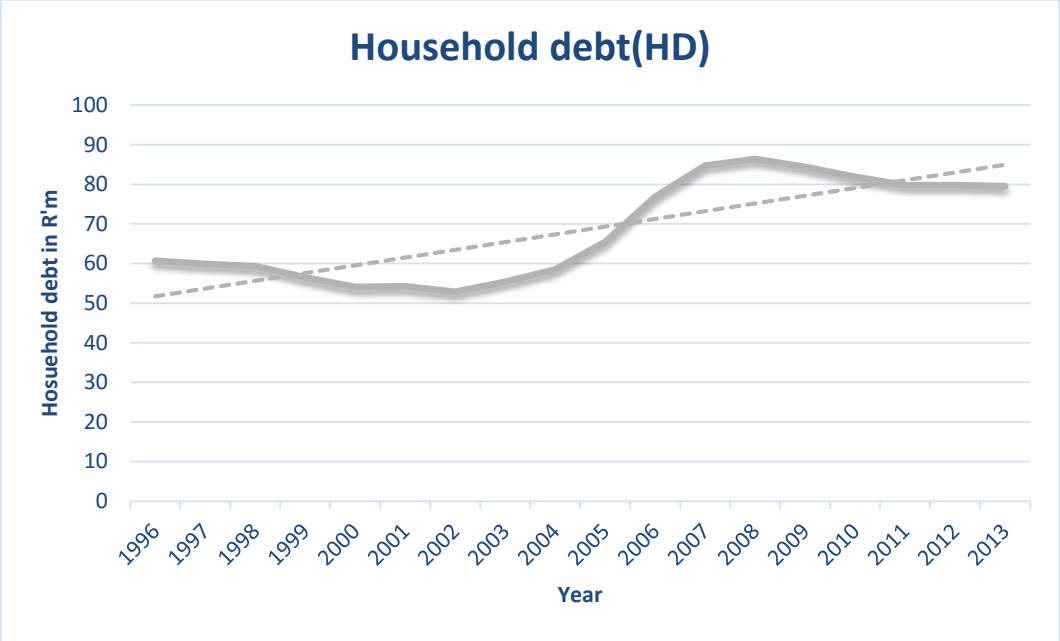
Source: Harrison, 2009, p. 2.

Health care in South Africa remains plagued by the persistent burden of "communicable and non-communicable diseases, continuing social disparities, and inadequate human resources to provide for a growing population" (Coovadia *et al.*, 2009 cited in Mayosi *et al.*, 2014, p. 1345). The national public health sector which is "staffed by about 30 percent of the doctors in the country, remains the sole provider of health care for more than 40 million people who are uninsured and who constitute about 84 percent of the national population." In addition, much of the public health care infrastructure remains dilapidated and dysfunctional as a result of underfunding, maladministration and neglect (Mayosi *et al.*, 2014, p. 1346).

Therefore, converted action will be needed to narrow the disparities in healthcare provision in order to generate opportunities for people to lead healthy and productive lives. In the medium term, "improving access to sustainable and effective health care services is a high priority" (Mayosi *et al.*, 2012, cited in Mayosi *et al.,* 2014, p. 1351). "Short-term measures should include strengthening public health care services, improving resource-allocation policies, and training an appropriate balance of health care professionals. Nurses and community health workers will probably play an increasingly important role in rural areas" (Mayosi *et al.*, 2014, p. 1351).

Government's suggestion for a national health insurance (NHI) is part of a welcome renaissance in public discourse about poverty, health and access to health services in South Africa. However, "before placing too much confidence in the notion that expanding access to bio-medical healthcare through NHI is the solution to narrowing the health gap, the broader social context for achieving greater equity in health outcomes must be considered" (Benatar, 2013, p. 154).

Figure 8: Household debt to disposable income of households in South Africa



Data source: SARB, 2015.

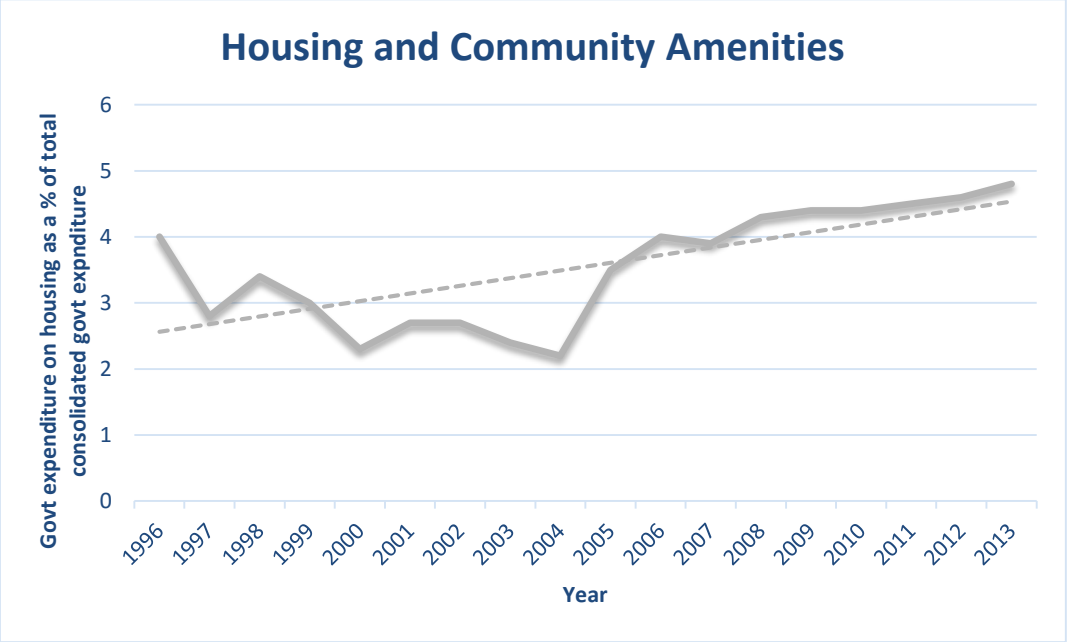
Figure 8 graphically presents the trend in household debt to disposable income of households. The trend depicts a slight decline in household debt in the late 1990s before picking up in the early 2000s.

Household indebtedness surged to a high rate of R60.7 million in 1996, partly as a result of the stimulated use of credit cards (Prinsloo, 2002, p. 70). However, because of stringent monetary policy and rising interest rates, credit demand deteriorated during 1997 as the use of private-label credit cards left households with high levels of indebtedness. As a result, the private-label credit cards became unpopular and there was consequently lower credit demand. This lead to the decline in household indebtedness as of 1997 to a rate of R52.9 million in 2002. Nevertheless, in later years the use of credit fast-tracked once more, reaching an all-time high of R86.4 million in 2008, before slowing down as of 2009. The restrained credit extension was a consequence of an economy operating significantly below capacity, along with the significant appreciation of the external rand, which resulted in stricter lending standards by private-sector banks. The impact of the financial crisis – which resulted in weak economic conditions – thus becomes evident because of the dampened use of loans and advances by households (SARB, 2009, p. 67). From that time on, the trend remained relatively unchanged at a rate of about R79 million.

Between 2002 and 2009, access to credit increased from just over 50 percent to about 80 percent. According to Barbra and Pivetti (2009, cited in Mutezo, 2014, p. 73) the rise sustained consumption and as a result contributed to the fall in household savings. Cronje and Roux (2010) maintain that the period of analysis (1996 to 2013) has been marked by an increase in the aggregate household debt, particularly amongst the rising black middle class. Marcus (2012) affirms Cronje and Roux's finding stating that there has been a growing concern in the rise of household debt in relation to their disposable income ratio.

O'Toole *et al.* (2013) argues that consumption directly affects households 'living standards, and is therefore an important measure of wealth. As a result of this, lower and middle class households have progressively spun to these financing tools to delight in the then consumption opportunities (Krugman, 2007). Improved access to credit by the deprived, can thus play a role in improving the deprived quality of life through enabling them to purchase the basic necessities which they would not have been able to purchase had they not accessed debt.

Figure 9: Government spending on housing and community amenities in South Africa



Data source: SARB, 2015.

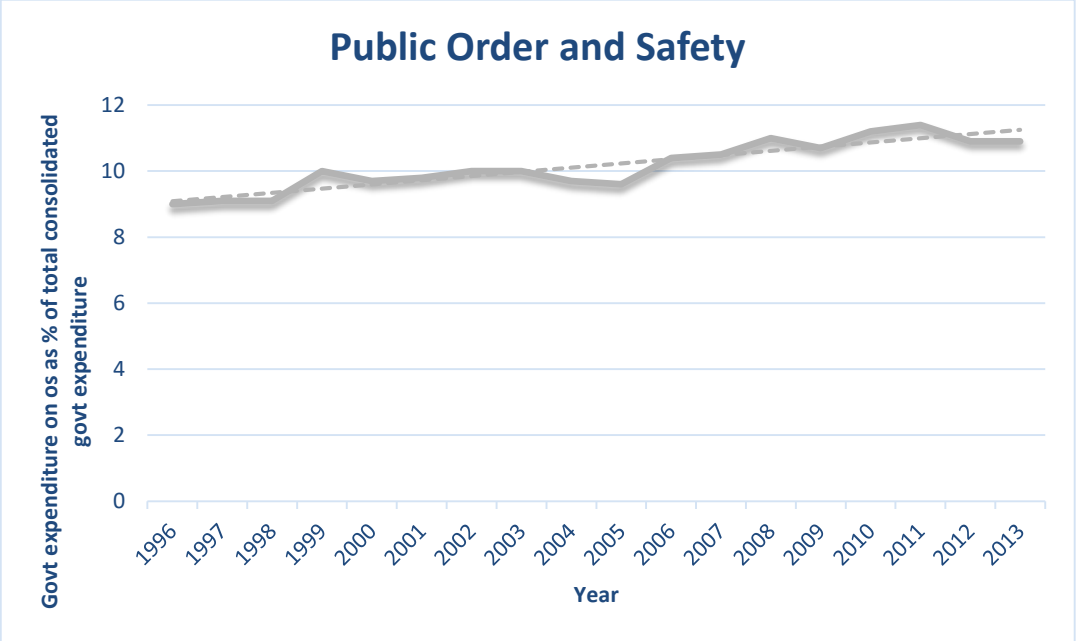
Figure 9 graphically depicts the trend of total consolidated government expenditure on housing and community amenities from 1996 to 2013. On average, government spending on the provision of low-cost housing has been on a rise.

On the other hand, the 1994 housing white paper refer to the provision of housing to South Africans as one of the utmost challenges government is facing. However, by 2011 a decrease of 3 percentage points of the portion of informal settlements representing the total number of households in the country as of 1996 had transpired (Wilkinson, 2014). For the most part, government has continued its drive of meeting housing needs of the deprived. For example, by 1999/2000 government had delivered just over 700 000. It should however be noted that housing delivery has fluctuated to about 140 000 houses annually since period 1998/99 (Wilkinson, 2014).

Despite the notable progress, low-cost housing provision remains a serious problem facing South Africa (Le Roux, 2009, p. 5). Statistics South Africa (2009, cited in Le Roux, 2011, p. 5) further reveals that only about 56 percent of South African lived in fully-owned formal dwellings in 2009. Addressing the massive housing backlogs that the democratic government inherited thus proves difficult to remove.

It can thus be concluded that although the provision of housing by government to the poor has served to help improve the quality of life of households by meeting one of the deprivations the poor live with, namely lack of shelter, many people remain unable to meet this deprivation (see section 4.4.1. Variables that reduce poverty in South Africa specifically the health section for more analysis in this regard).

Figure 10: Government spending on public order and safety



Data Source: SARB, 2015.

Figure 10 depicts total consolidated government expenditure on public order and safety in South Africa for the period 1996 to 2013. The figure depicts that government spending on safety has, on average, increased throughout the period of analysis.

While government sustains that the rise in safety spending has led to the improvement in safety in the country, cognisance should be taken of the fact that crime and crime statistics in South Africa remains a highly controversial and contested issue. A notable example is that of the South African Police Service's release of the 2006/07 crime statistics. The police's release revealed that there had been a serious increase in violent crime - confirming the fears of many citizens (Institute for security Studies, 2007, p. 1). Such increases were disappointing, predominantly in view of promising decreases since 2002/03, coupled with the rise in budgets of key departments.

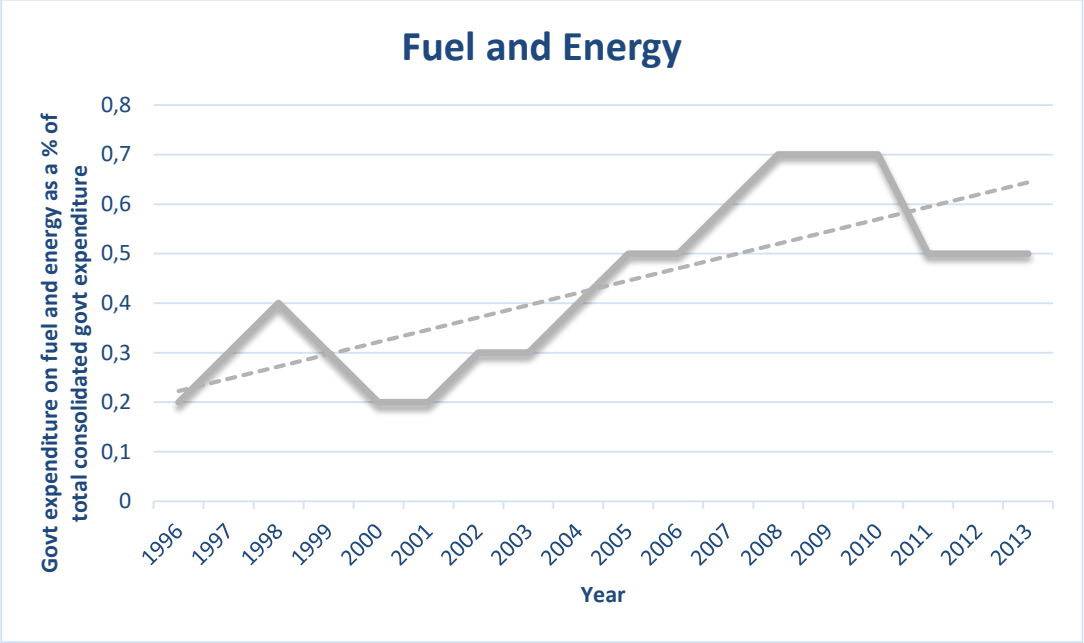
Even though the country had witnessed an overall downward trend in crime, such news was met with scepticism and suspicion. This is because of citizen's negative perceptions of crime, as well as the police's ability to protect civilians and their property (Harris and Radealli, 2007, cited in Institute for Security Studies, 2007, p. 1).

In spite of rise in government spending on crime throughout the period of analysis (see Figure 10), it remains argued that the 2002/03 period witnessed South Africa's worst levels of crime for the thirteen-year period between 1994/95 and 2006/07 (Institute for Security Studies, 2007, p. 1). Ironically, South Africa hosted an incident-free ICC Cricket World Cup. Nevertheless, overall crime rates have declined steadily between 2002/03 and 2005/06. The crime rates dropped by about 6 percent annually between 2002/03 and 2005/06, but the decline in 2006/07 slowed to 2 percent (ISS, 2007, p. 2).

Judging from the whole crime picture, at least as far as reported crime is concerned, Government has made considerable progress in making an impact on the country's crime situation (Institute for Security Studies, 2007, p. 2). Serious crime levels are continuing to come down, albeit at a sluggish rate than in preceding years. For instance, the amount of serious crimes reported fell from over 5 thousand to 3.5 thousand per 100000 population between 2002 and 2013, with a further reduction from 3508.2 in 2012/13 to 3448.2 in 2013/14. The government has also made progress in reducing the ratio of contact crime reported. The number of reported sexual offences have dropped since 2003/04. For example, the ratio dropped from 127 in 2012/13 to 118.2 in 2013/14. Such improvements have enhanced household's quality of life by making them feel safer, a component that many households lack.

However, the slower rate of decrease "raises legitimate questions about why the rate of decrease has slowed." So, although the "crime statistics provided by the SAPS are generally regarded as fairly accurate and credible, the question of the extent to which reported crime is a true reflection of the 'real' crime situation remains relevant" (Institute for Security Studies, 2007, p. 2).

Figure 11: Government spending on fuel and energy in South Africa



Data Source: SARB, 2015.

An analysis of government expenditure on fuel and energy shows that expenditure has been fluctuating throughout the period of analysis. However, overall government spending on energy has increased considerably over time.

The rise in expenditure could be attributed to, amongst the other reasons, government spending on the National Electrification Programme, which is said to have achieved impressive electrification levels throughout the country (see section 4.1. Descriptive statistics for more information regarding the attributable factors). By the end of 2001 the proportion of homes with right to use electricity had improved to 77 and 49 percent for urban and rural areas respectively (NER 2001b, 2001a, cited in Davidson and Winkler, 2003, p. 18) from about 35 percent in 1990 (Eberhard and Van Horen, 1995, cited in Davidson and Winkler, 2003, p. 18). From this point forward, the costs per connection – for the electrification programme – started to rise. Government consequently replaced the target driven approach with the market related approach. It should be noted that majority of "connections in the 1990s were in urban and rural areas that were relatively cost effective to electrify" (Davidson and Winkler, 2003, p. 18). However, the Department of Planning Monitoring and Evaluation (2014, p. 39) reveals that "new electrical connections [by year] have [deteriorated severely] since 1994 from just under 500 000 households to an average of [approximately] 200 000 by 2004."

However, Ismail and Khembo (2015, p. 77) found that households who were connected to the national electrical grid were more energy poor. This highlights the fact that connectivity is only one part of the problem and that connectivity does not reduce energy poverty. Instead, affordability of household's basic services should also be taken into account (Ismail and Khembo, 2015, p. 77). Regulators and government should try ensure that electricity is efficiently priced and perhaps look into differential pricing across sectors.

Taking into account the aforementioned analysis, it can be said that government has made notable progress in improving some households' energy provision, thereby helping some households escape energy poverty. However, more still needs to be done to ensure a significant amount of people are no longer energy poor. A possible consideration, for the near future, is for government to look into educating poorer households around renewable energy options. In turn, this is most likely to result in more people having access to electricity and modern energy, which will improve people's life chances (see section 4.4.1. Variables that reduce poverty in South Africa for further analysis).

4.3. Cross correlation analysis for the variables employed in this study

A useful exercise is to examine the correlation between poverty (measured in monetary terms by the lower-bound poverty line) and the explanatory variables employed in this study. Cross-correlation analysis is useful as it can be used to ascertain the association between poverty and the other explanatory variables. The analysis reveals the direction and strength of the relationship between the lower-bound poverty line (the dependent variable) and the chosen independent variables. The researcher is able to determine the prior expectations of which determinants might contribute to the level of poverty in South Africa; through the examination of signs and magnitude of the correlation coefficients. It is expected that the results from the correlation coefficient analysis will yield insightful information into what policy should focus on in the efforts to alleviate poverty in the country. Prior to examining the correlation matrix, it is crucial for the researcher to explain how the analysis was executed.

On the basis of the knowledge discussed in section 3.7.1 the study now presents the cross correlation analysis for the variables to be included in the trend analysis (see Chapter four: Data presentation and analysis). When analysing the strength of the relationship correlation coefficient values greater than 0.5 are considered large (strong), between 0.3 and 0.1 are small

(weak) and values smaller than 0.2 are insubstantial (not worth worrying about) (Cohen, 1988 cited in Hopkins, 2002, p. 1).

Table 7: Correlation coefficients between poverty and explanatory variables (n=18)

Variables	*tlbpl*	*totedu*	*hlth*	*hs*	*hd*	*os*	*t*	*e*	*u*
tlbpl	1.00								
totedu	0.31	1.00							
hlth	-0.85***	0.03	1.00						
hs	-0.85***	-0.36	0.70***	1.00					
hd	-0.85***	-0.63***	0.59***	0.88***	1.00				
os	-0.79***	-0.56**	0.73***	0.67***	0.79***	1.00			
t	-0.22	-0.27	0.37	0.12	0.30	0.54**	1.00		
e	-0.63***	-0.71***	0.45*	0.71***	0.90***	0.73***	0.28	1.00	
u	0.05	-0.06	0.18	-0.29	-0.24	0.24	0.37	-0.06	1.00

Source: Results of the researcher's statistical analysis.

*Note: ***/**/* denotes a 1/5/10 percent level of significance.*

Note: tlbpl is the total lower bound poverty line, totedu is the total government expenditure on education, u is the unemployment rate, hlth refers to government spending on health, hd is the household debt to disposable income of households, hs refers to government spending on housing and community amenities, os refers to government expenditure on public order and safety and e refers to government spending on fuel and energy

The cross correlation analysis in Table 7 was conducted using Eviews 9. The observed correlation between government spending on education and poverty (measured by the lower-bound poverty line) as well as unemployment and poverty is positive. This implies that even though government might spend a substantial portion of their consolidated expenditure on education, and perhaps improve access to education (particularly for those who cannot afford), this will not necessarily result in people escaping poverty. In some literature a strong link

between educational attainment and standard of living has been established – with individuals with little or no education being more likely to be worse off than those with higher levels of education (Woolard, 2002, p. 3; Woolard and Leibbrandt, 1999, p. 32). The variable used here is government expenditure on education, instead of the number of people who have finished school and/or the average years of education achieved by the adult (16 years and older). Bhorat *et al.* (2004, p. 11) maintain that ever since 1996 "there has been a marked improvement in educational attainment throughout" the country. Their study reveals that there has been a discrete drop in the percentage of "persons with no schooling and a [noteworthy rise] in the [percentage] of [persons] with [matric] or higher education." However, the study argues that the figures do not reveal changes or progress in the quality of schooling. Consequently increased access to education has not resulted in the acquisition of good and employable skills. Educational attainments must lead to good and employable skills and be complemented by employment opportunities to enable people to earn income after school. This echoes May's (1998) view that economic growth and equal employment opportunities will have to exist and complement fiscal redistribution to enable the deprived to lift themselves out of poverty in the long-term. Dua-Ageyeman (2005, p. 5) confirms May's (1998) views and concludes by stating that "there cannot be significant fiscal redistribution unless the South African economy registers high levels of economic growth and job creation". This view aligns with White and Killick (2001; p. 22) argument that improvement in the provision of social services can only occur in the context of economic growth.

The positive correlation coefficient of unemployment and poverty supports the fact that lack of income renders one incapable of having means to satisfy or access one's basic needs. There is thus a possibility that if unemployed, and vice versa, the likelihood of being poor may be higher than for the employed person. However, cognizance should be taken of the fact that other factors can cause or affect the relationship between unemployment and poverty - for example social protection schemes – which could alleviate the impact of unemployment on the quality of life of households.

On the other hand, state expenditure on health, housing, access to credit, public order and safety provision and energy are found to be negatively correlated with poverty in South Africa. This implies that government's expenditure on health service provision, housing, energy provision and safety improves the quality of life for households by, alleviating different forms of

deprivations in household lives and consequently household poverty. Adequate quality healthcare services thus have positive outcomes for the country. Access to quality housing is an important indicator of well-being for various reasons. For instance, it has important health and safety elements, thereby affecting the standard of living of its occupants directly (Klasen, 2000). Fuel and energy provision is also an important determinant of poverty, since they improve the quality of life for households in terms of lighting and cooking. Indoor air pollution caused by the use of wood (a result the lack of access to safe forms of energy) may result in serious environmental conditions that could adversely affect households (World Bank, 1993, cited in Klasen, 2000). Sustained fuel and energy provision further facilitates productive economic activity thereby increasing economic output, and creating stable jobs for households. Access to financial services (credit) enables the poor to acquire their basic needs whiles spending responsibly and servicing the debt timeously, improving their quality of life. The improvement in the crime conditions along with better perceptions of safety in the country play an important role in ensuring that people are safe.

These results give insight into what poverty reduction policies in South Africa's should focus on. From the line graphs and the cross correlation analysis, the following a priori expectations (expectations derived by reasoning from self-evident propositions) are found and supported by relevant literature.

Table 8: A priori expectations

Variables	Relationship to poverty
totedu	Government spending on education does not reduce poverty.
u	Unemployment increases poverty
hlth	Government expenditure on health service provision reduces poverty
hd	Access to credit reduces poverty
hs	Government spending on housing and community amenities reduces poverty
os	Government spending combating crime reduces poverty.
e	Government spending on energy provision reduces poverty

Source: Results of researcher's statistical analysis.

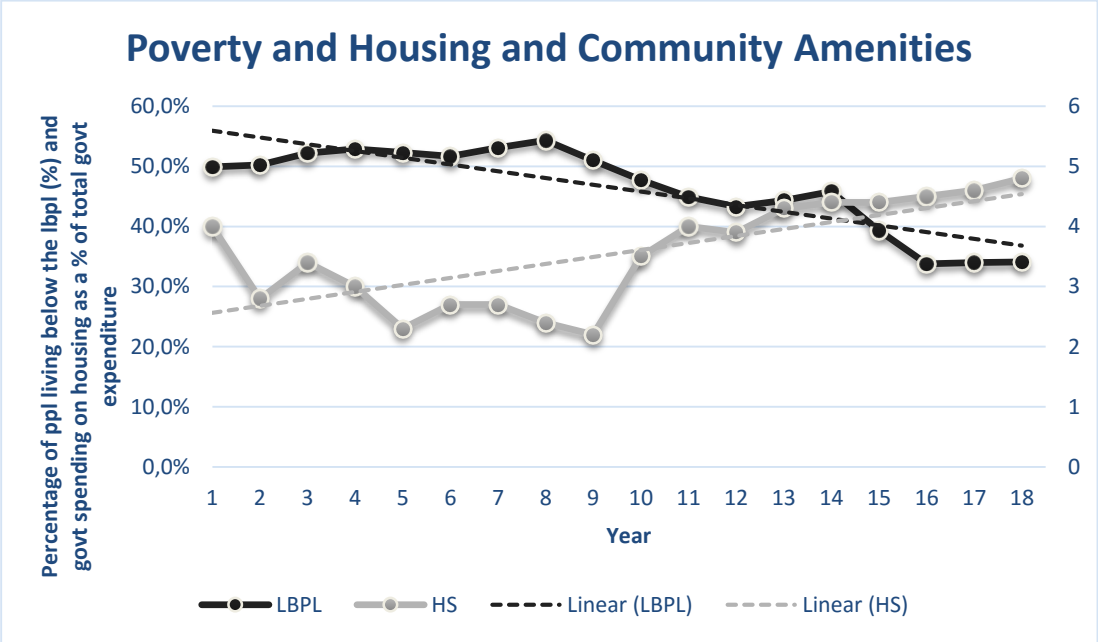
4.4. Variables that reduce or do not reduce poverty in South Africa

In this section, the researcher focusses on the relationship between the variables identified in this study (derived through having significant correlations with the poverty line) that could possibly reduce poverty in South Africa. These are health, housing and community amenities, household debt to disposable income ratio, public order and safety, and energy and fuel provision by government. In each case, the researcher plots the dependent variable, poverty, with each of the explanatory variables and explains what factors have driven these relationships over the sample period and what the implications are for poverty reduction in South Africa. Other variables in the study will also be assessed. Prior to conducting the analysis, the researcher highlights that the adopted research design does not prove causation, but merely shows a relationship, which may or may not be causal (i.e. both variables may be caused by something else). The approach used in this study is guided by Klasen (2000) and Finn *et al.* (2013). Whilst these scholars ran regressions, the current study conducts a trend analysis instead. The main reason for this is limited data points that the researcher was able to obtain. Through the use of a trend analysis, the section that follows discusses the variables that were found to be likely to reduce poverty in South Africa.

4.4.1. Variables that reduce poverty in South Africa

This sub-section presents an analysis of variables included in the study, from which a negative relationship was depicted between poverty and the respective explanatory variable. This suggests that the respective explanatory variables could possibly reduce poverty in South Africa. The explanatory variables are housing provision, health care provision, energy provision, safety and improved access to credit – particularly for the poor. Findings from this section will respond to the main research questions, as well inform the applied research question as well.

Figure 12: Relationship between poverty and government spending on housing and community amenities



Data Source: SARB, 2015.

Figure 12 analyses the trend between poverty and government spending on housing and community amenities. A negative relationship is depicted between the two variables. This relationship is in line with the correlation analysis results, in which a strong negative relationship was found between the two variables. Such a relationship suggests that as housing increases and the provision of community amenities improve, poverty levels could possibly decrease considerably.

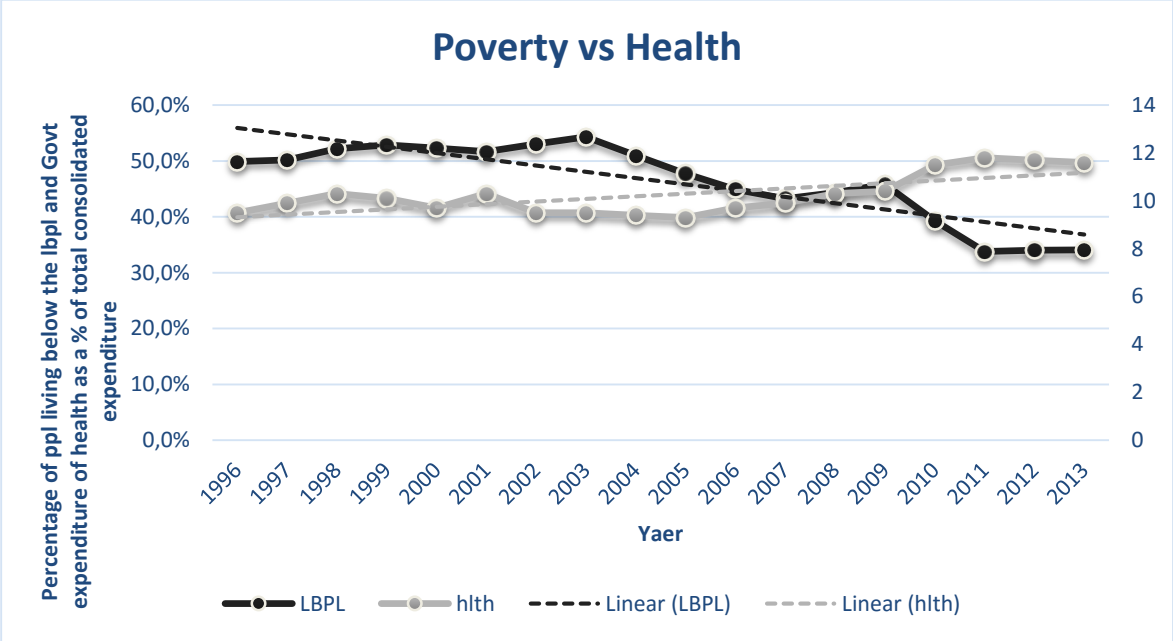
Throughout the period of analysis, it is depicted (in Figure 12 that the number of people living below the lower-bound poverty line decreased as government expenditure on housing and community amenities increased. This implies that housing and community amenities have the potential to improve the well-being of people.

The substantial increase in government expenditure on housing and community amenities along with the decrease in the number of people living below the lower-bound poverty line could perhaps be partly attributable to governments subsidy on housing programmes that run through several thousand projects country-wide and contributed roughly 1 367 870 formal houses between 2004 and 2014 (DPME, 2015, p 34).

However, "access for the [underprivileged] to urban land and housing [remains] one of the main challenges facing policy makers in South Africa. Estimates suggest that 26 [percent] of households in the six metropolitan areas in our country live in in-formal dwellings, often "illegally" and with limited access to services" (Chetty, 2012, p. 1). "Escalating housing prices, limited access to land and housing finance, land regulations which govern sub-division of land, highly regressive land taxation, and low supply elasticity of subsidised housing has made it difficult for the poor as well as middle class households to enter the formal housing market" (Chetty, 2012, p. 1).

Even though 3.3 million low-cost homes have been built throughout the country, informal settlements have mushroomed around cities as the state programme (Reconstruction and Development Programme) failed to keep pace with population growth (refer to Figure 9's explanation). It is therefore evident that more still needs to be done to address the housing shortage in the country. If government efforts are focussed on the provision of urban land and housing to the poor, this will help facilitate the positive impact of government expenditure on housing and community amenities to reduce the number of people living in poverty over the period of analysis and beyond.

Figure 13: Relationship between poverty and government spending on health



Data Source: SARB, 2015.

Figure 13 plots the number of people living in poverty, as measured by the lower-bound poverty line, along with government expenditure on health in South Africa. The variables trends reveal that a negative relationship exists between health and poverty in South Africa. This aligns with the strong negative correlation finding between the two variables. This implies that as health provision improves in the country, then less people will be classified as poor. Basically a healthy household leads to a healthy work force that is capable of earning income to meet their basic needs. Such an implication suggests the importance of health in improving the well-being of the citizens of South Africa. In order for individuals to be able to engage in productive work activities, good health is required.

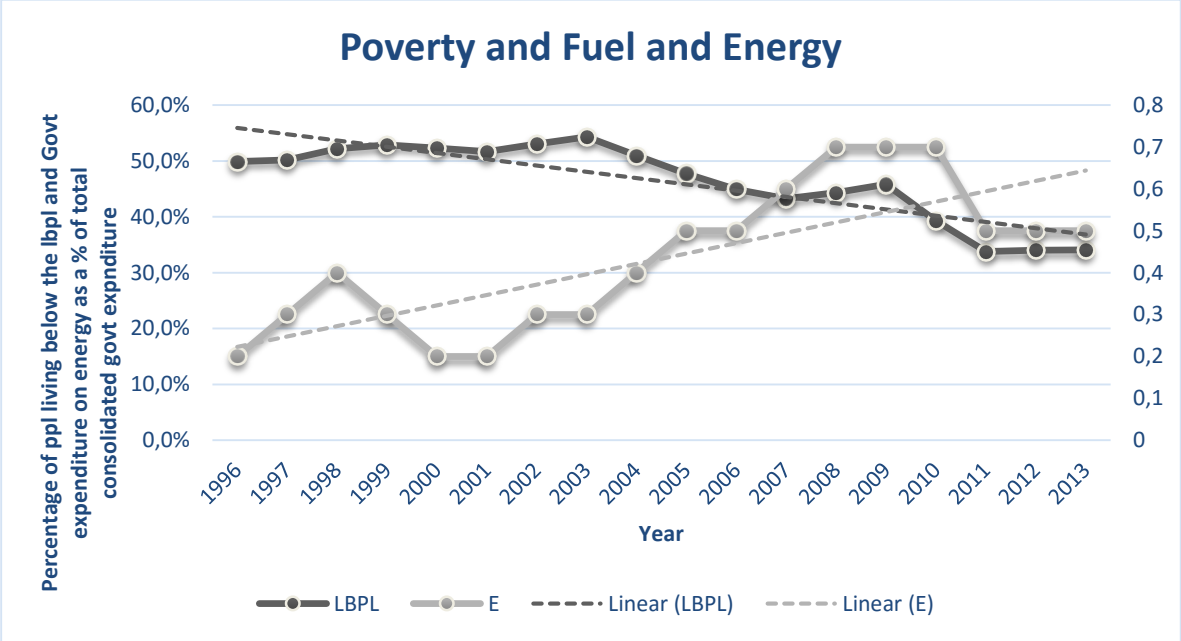
The period between 2007 and 2009, however, experienced an increase in both poverty and government expenditure on health. This trend could perhaps be attributable to the impact of the global economic downturn during this period. So notwithstanding the rise in health expenditure during the same period, poverty could have been driven by other factors such as job losses.

It should however be noted that there have been important improvements in access to healthcare since the advent of democracy, more specifically post-2004, and governments focus in decreasing the burden of disease (see Figure 13). “Addressing the socio-economic determinants

of ill health and improving the quality of service in public health" (Presidency of the Republic of South Africa, 2014, p. 164) is evident in the sustained substantial spending by government in the health sector. These improvements in health service provision have consequently resulted in an improvement in the well-being of those classified as poor thereby improving the standards of living of the poor. However the quality of healthcare provision remains highly contested (see to Figure 7's explanation).

While health-care access has improved for all, substantial inequalities persist mostly because of the distortion in resource allocation (Coovadia *et al.*, 2009, p. 817; Gilson and Mc Intyre, 2007, p. 673). Access barriers, particularly in rural areas, comprise immense distances resulting in "[expensive] travel costs, [high] out-of-pocket payments for care" (Goudge *et al.*,, 2009 cited in Harris *et al.*, 2011, p. 1), long queues (Nteta *et al.*, 2010 cited in Harris *et al.*, 2011, p. 1) and disempowered patients (Schneider *et al.*, 2010 cited in Harris *et al.*, 2011, p 1). Harris *et al*. (2011, p. 1) maintains that in order to reach equitable universal health coverage (UHC), all South Africans would need to able to access necessary services despite the known of financial constraints of the poor. So even though the restructuring of the public health sector has attained noteworthy advances in "terms of access, rationalisation of health management and more equitable health expenditure"; it should be noted that the degree of access achieved is actually determined by the "degree of fit between demand and supply sides [instead of] each in isolation" (Harrison, 2009, p. 2; Thiede, Akweongo and McIntyre, 2007 cited in Harris *et al.*, 2011, p. 1).

Figure 14: Relationship between poverty and government spending on fuel and energy



Data Source: SARB, 2015.

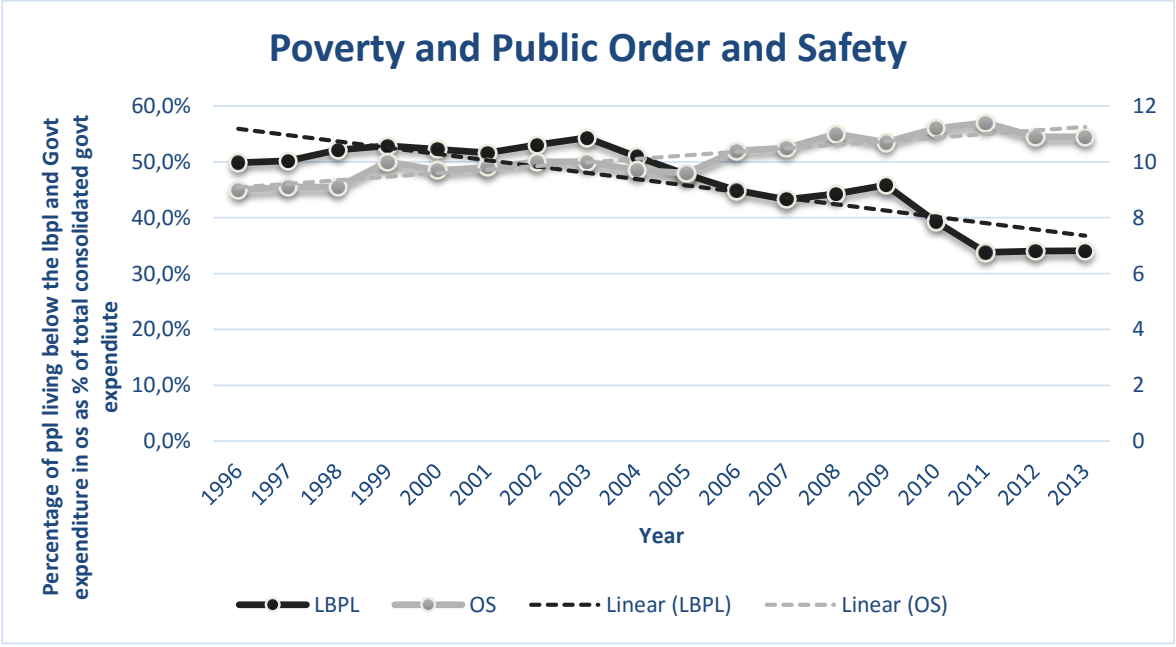
Figure 14 graphically represents the relationship between poverty and government spending on fuel and energy. The figure depicts that a negative relationship exists between the two variables. This trend is consistent with the results of the correlation analysis, which revealed that a strong negative relationship exists between the two variables.

This trend may be attributable to South Africa's electrification programme since the early 1990's. However, in spite of the progress in the provision of electricity for households and/or the residential demand subsector, about 3.4 million households (1.2 in informal housing and 2.2 in the formal housing) remained without electricity across the country (Bernard, 2012, p. 8; Swart and Bredenkamp, 2012, p. 2). As a result, more households in low income areas were found to use paraffin for cooking (57 percent) in comparison to households that use electricity for cooking (23 percent). Additionally, 46 percent of households were found to use paraffin for heating whilst 18 percent used electricity. Wood usage as an energy form depicted similar percentages. When observing energy usage for lighting in resource poor areas, it is found that the use of candles remains the common source. This makes it evident that low-income family units make use of multiple fuels for numerous reasons, specifically affordability and cultural or behavioural preferences (Swart and Bredenkamp, 2012, p. 2)

A peculiar trend, however, emerges from 2010 onwards. As government energy provision decreased, the number of people living below the poverty line also decreased. This could be related to poor maintenance standards and the culture of non-payment for electricity (Political Analysis South Africa, 2015). Therefore, even though the country embarked on an intensive electrification program post-political transition (1994) which brought about an improvement in access to electricity; households had to face the constraint of being charged user fees for this form of energy (Bhorat *et al.*, 2004, p. 8). As a result, the more deprived remained heavily reliant on wood and paraffin as alternative energy sources for cooking. This is the case as wood is more readily available in rural areas while paraffin is more readily available in urban areas.

So, whilst government spending on fuel and energy might have decreased, those classified as poor using the *lbpl* did not incrementally rise because even in cases where government bettered households access to electricity , i.e. through the national electrification programme, households in most cases still made use of alternative energy sources (which they purchased with their already low income) which has contributed to the highly regressive and inequitable energy financing environment in South Africa (Swart and Bredenkamp, 2012, p. 3).

Figure 15: Relationship between poverty and government spending on public order and safety

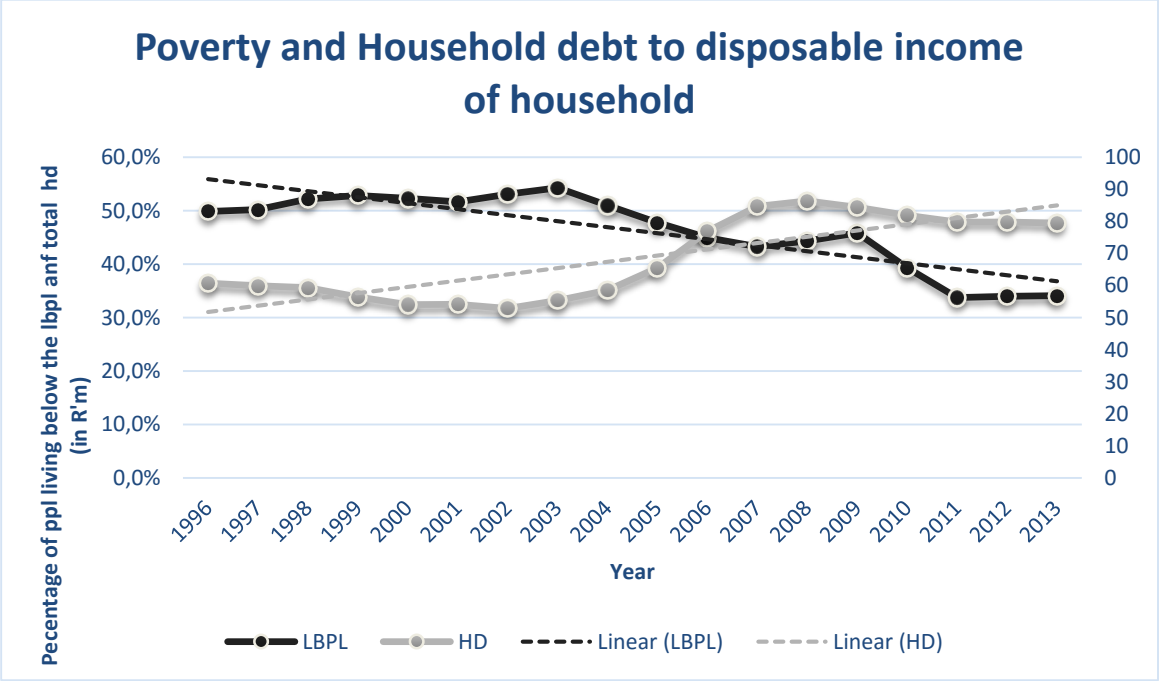


Data Source: SARB, 2015.

Figure 15 plots poverty against government expenditure on public order and safety. A negative relationship is depicted amongst the variables implying that as public order and safety improves in the country, peoples standard of living is likely to improve. This result is consistent with the correlation coefficient result which discloses a strong negative relationship occurs amid the two variables (results from researcher statistical analysis).

The generally influential Department of Planning Monitoring and Evaluation (DPME) (2013, pp. 71 and 72) maintains that the democratic government has made considerable progress in reducing crime, suggesting that the serious crime levels in the country are stabilizing. However, different surveys maintain varying views, which questions the extent of progress that has been achieved in reducing crime in South Africa. The Department of Monitoring and Evaluation (2013, p. 71) shares that "the 2012 Victims of Crime Survey (VOCS) conducted by [Statistics South Africa] (Stats SA) showed that fewer people (33.1 percent) believed that levels of violent crime had increased in the country while a greater number (38.1 percent) felt that levels of violent crime had decreased." However, the 2015 Afrobarometer shows that public disapproval of governments performance on crime reduction increased by 13 percentage points to 77 percent in 2015, up from 64 percent in 2011 (Chingwete, 2015, p. 5). These concerns about crime align with crime rate statistics released in September 2015 by the South African Police Services (SAPS), in which 16 out of the 27 crime categories saw increases from the previous year (Business Tech, 2015 cited in Chingwete, 2015, p. 2). Furthermore, South Africa scored poorly in regional comparison (comprising of nine Southern African countries). Specifically, South Africa ranks highest (along with Mauritius) in public disapproval of government performance in reducing crime (Chingwete, 2015, p. 9). Looking specifically at the study's period of analysis, the 2013/14 crime statistics revealed that the year between 2003 and 2011 saw a reduction in overall crime levels. However, the Institute for Security Studies and Africa Check (2014, p. 6) maintains that "the rate of the annual reduction [has slowed since 2011] and [that] in the past two years there has been an increase in the most significant categories of crime."

Figure 16: Relationship between poverty and households' access to credit



Source: SARB, 2015.

Figure 16 graphically represents the interaction between poverty and households' access to credit in South Africa for the period 1996 to 2013. A negative relationship is depicted, aligning with the results found in the correlation analysis. This implies that as households' access to credit declines, the more poor households are likely to be.

Such a trend is properly depicted in the period 1996 to 2006. As illustrated in Figure 16 when households have limited access to credit, the higher the percentage of people living below the lower-bound poverty line. Contrary, when individual's access to credit rises (the period 2007 and onwards) their standards of living improve. It should however be noted that unfavourable economic conditions from 2007 onwards led to higher interest rates and job losses, making credit more expensive to acquire. This implied that the poor had restricted access to obtaining some form of cash so as to purchase the basic necessary items, thus deteriorating their standard of living (refer to Figure 8's explanation for more information on the reasons for fluctuations).

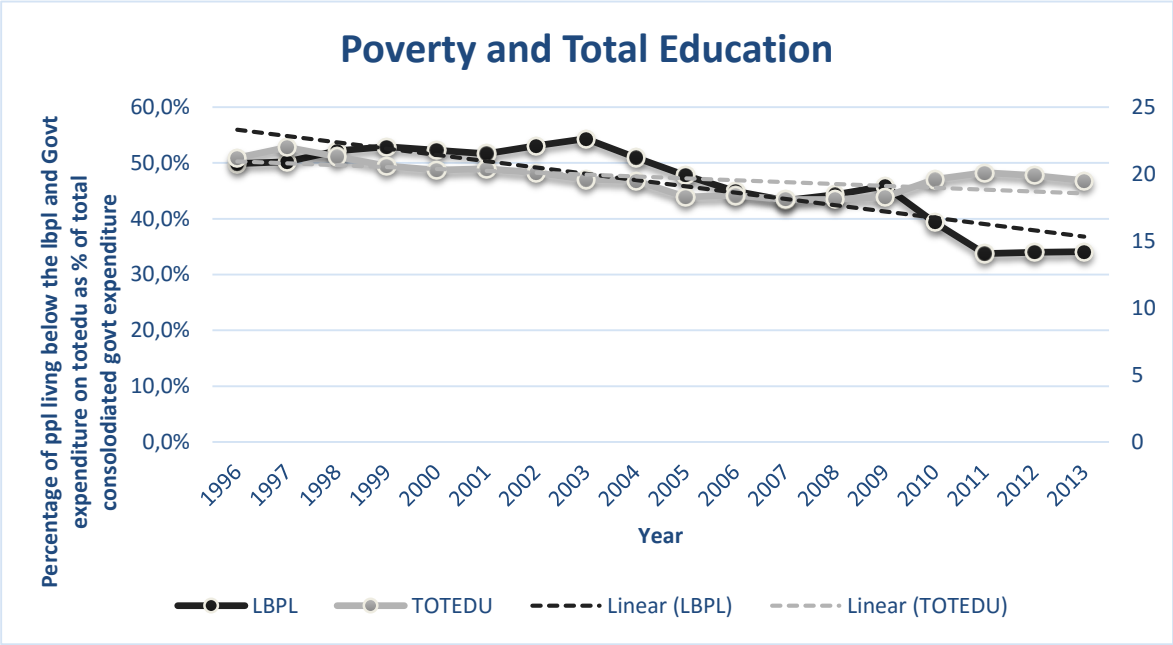
It can therefore be concluded that access to credit improves poor people's standard of living (even if it is in the short-term) because it enables them to purchase the basic necessities which they would not have been able to purchase had they not had access to debt/immediate cash.

This is supported by the trend above, which reveals that as household's access to credit declines, the poverty incidence rises.

4.4.2. Variables that do not reduce poverty in South Africa

This sub-section presents an analysis of variables included in the study that were found not to have an impact on mitigating poverty in South Africa. These variables included education and unemployment for the sample period of 1996 to 2013. This sub-section therefore discusses the variables which were found to have a weak positive relationship with poverty in the country, contrary to the negative correlation found between poverty and the other explanatory variables in section 4.4.1. Variables that reduce poverty in South Africa.

Figure 17: Relationship between poverty and government spending on education



Data Source: SARB, 2015.

Figure 17 plots poverty against government expenditure on education. The figure depicts that the two variables have trended together for most part of the sample period until 2009 when they began to move in opposite directions. This finding is consistent with the correlation analysis findings which found a weak positive relationship exists between the two variables.

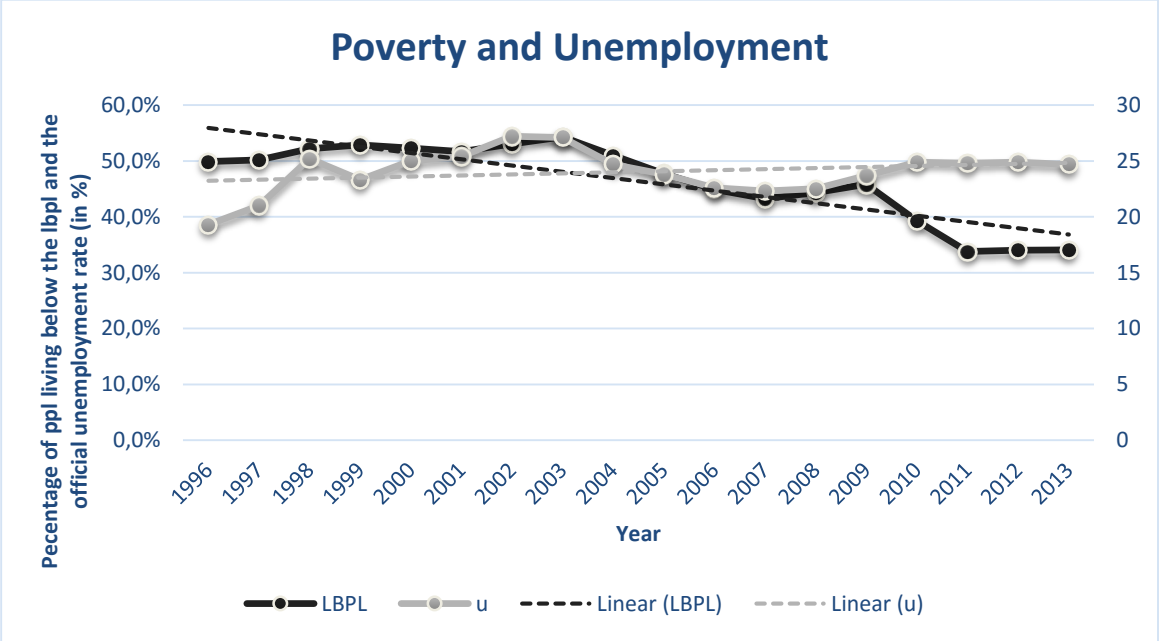
Figure 17 reveals that education expenditure has enlarged significantly since 1995, "from R31.1 billion to R165 billion in 2010/11. Real growth in this sector from 1994 to 2005 totalled 49 per

cent, and with an annual average of 5.5 per cent of GDP." It should be noted that South Africa's spending on education is respected, especially when being compared to other middle-income country (Finn *et al.*, 2011, p. 79).

Conversely, the educational quality remains poor and does not "render the expected returns of the budgetary investment" (DBE, 2010, cited in Finn *et al.*, 2011, p. 79). As a result, the country remains unable to provide the economy with the skills it requires. It was also found that educational expenditure across provinces has not equalised (Finn *et al.*, 2012, p. 79; Fiske and Ladd, 2004, cited in Branson *et al.*, 2013, p. 1). For that reason, education outcome, as measured in the performance of student, are still highly unequal.

So, while education is one of the most important correlates of poverty in South Africa – as indicated by literature (for example Klasen, 2000; Finn *et al.* 2013a and 2013b) – it is important to note that the variable used in this study is government spending on education and not educational attainment. This study thus retains that government spending on education does not necessarily result in individuals attaining a specific level of education, nor does it indicate educational quality. "South Africans therefore need to recalibrate their appreciation for the value of education and combine that newfound respect with a corresponding show of appreciation for teacher" as maintained by Adan Ikdal, Boston Consulting Group (BCG). Focus also needs to be placed "on accountability for teachers' performance, which will improve educational quality" (BCG, 2015, p. 2). Government spending on education, along with educational quality should also be accompanied by programmes to create employment that can absorb the skills –with particular focus on the poorest provinces/regions (HSRC, 2014, p. 12).

Figure 18: Relationship between poverty and unemployment



Data Source: SARB, 2015.

Figure 18 plots the poverty rate against the official unemployment rate in order to be able to depict the relationship between the two variables. A positive relationship is depicted, aligning with the results found in the correlation analysis (revealing a weak positive relationship exists between the two variables).

The statistics period 1996 to 2002 reveals that the official unemployment rate increased, as did the number of people living below the lower-bound poverty line. This was followed by a decline in both unemployment and poverty from 2003 to 2009. The decline in both poverty numbers and the unemployment rate could be attributed to the public employment programmes under the extended public work programme (see Figure 6's explanation for more information).

A puzzling outcome relating to the links between poverty and unemployment is that there is lower poverty (since 2010) despite the rise in the unemployment rate. The figure depicts that the number of people living in poverty declined, despite the rise in the unemployment rate in the respective years. This might perhaps be a result of government's extensive social protection programmes. South Africa, according to Hagen-Zanker, Morgan and Meth (2011, p. 3), has one of the best sets of social protection policies in Africa, comprising of the child support grant (CSG), the old age grant, disability grant, war veterans' grant, foster child grant and the child

dependency grant (Hagen-Zanker *et al.,* 2011, p. 5; Leibbrandt *et al.*, n.d., p. 37). The peculiar trend depicted from 2010 could therefore be attributable to the relatively stable rate in social assistance support experienced in 2010/2011 and 2011/2012 after the social assistance support peaked at 3.5 percent of GDP in the 2009/10 financial period. Consequently although it is conventionally expected that the higher the unemployment rate, the more people there would be living in poverty, other factors have to be taken into account (DPME, 2015, pp. 31 and 32; HSRC, 2014, pp. 18 and 38; SAHRC and UNICEF. 2014, pp. 118 and 145; DPME, 2013, pp. 26 and 31; Hagen-Zanker, Morgan and Meth, 2011, p. 3; Dicks *et al.*, 2011, pp. 7 and 20; OECD, 2008, pp. 33, 122 and 242; Dua-Agyeman, 2005, p. 85). As a final point, social grants play a significant role in bettering the lives of the poor and should therefore be considered when examining the link between poverty and unemployment in South Africa (Hagen-Zanker, Morgan and Meth, 2011; Dicks *et al.,* 2011, pp. 7 and 20; OECD, 2008, p. 255; Leibbrandt *et al.*, n.d., pp. 4, 22-23 and 38).

4.5. Conclusion to the chapter

This chapter made use of different data analysis techniques, to present and analyse the data collected through official statistics, specifically the South African Reserve Bank (SARB) and IHS Global Insight. The various techniques comprised of descriptive statistics, line graphs, correlation analysis and trend analysis. Carried out in Eviews 9 the descriptive statistics, specifically the mean (average), the minimum and the maximum of each of the variables, was used to describe what the data showed (Trochim, 2006, p. 1). Line graphs were used to examine the trend of each of the variables over the period 1996 to 2013. In addition, cross-correlation analysis was used to ascertain the correlation between poverty as measured by the lower-bound poverty line- and the other explanatory variables (education- *totedu*, unemployment- *u*, health – *hlth*, access to credit - *hd*, housing - *hs*, safety – *os* and energy- *e*). This was done so that the researcher is able to determine a prior expectations of which determinants might contribute to the level of poverty in South Africa; through the examination of signs and magnitude of the correlation coefficients.

Focusing on the variables that were found to be significantly correlated with poverty (health, housing, crime, energy and access to credit), the researcher conducted a trend analysis. In each case, the researcher plotted the independent variable, poverty, with each of the explanatory

variables and explained what factors might have driven these relationships over the sample period and what the implications are for poverty reduction in South Africa. The researcher also assessed the relationship between the variables found not to be significantly correlated with poverty (government expenditure on education and unemployment).

In relation to the research questions and existing literature, specifically Klasen (2000) and Finn *et al.* (2013b) the researcher finds that poverty is negatively correlated to government expenditure on health, housing, crime, energy and access to credit. This finding is consistent with Klasen (2000) and Finn *et al.* (2013b) and implies that as one variable increases, e.g. health, then poverty decreases (and vice versa). However, it should be noted that correlation does not prove causation. Instead correlation shows a relationship, which may or may not be causal, i.e. both may be caused by something else.

In contrast, through the same data analysis techniques, it was also found that government expenditure on education does not really reduce poverty in South Africa, neither does unemployment increase poverty in South Africa. As alluded to in earlier sections of this research dissertation expenditure on education has not necessarily impacted on the quality of education in South Africa. Despite the fact that unemployment is said to worsen poverty, in the South African context unemployment is not found to worsen poverty as much as it is expected to because of the social protection interventions by Government.

Chapter five: Conclusion and policy recommendations

5.1. Introduction

Post-political transition (post-1994) efforts to decrease poverty have yielded inadequate success. Consequently, South Africa continues to face the triple challenges of inequality, unemployment and poverty – with more than half the population living below a dollar a day (World Bank, 2014). Poverty is one of the major policy challenges in the country. Nevertheless, the concept of poverty is a multifaceted phenomenon. Although there remains extensive discussion as to how poverty should be defined and measured, this study maintains that the measurement of poverty has (in the 21st century) become multi-dimensional. However many challenges arise in trying to analyse poverty along its diverse and numerous dimensions. To try facilitate measurement, this study adopted the World Bank's Development Report's (1990, p. 27) definition of poverty which denotes poverty in its unidimensional form: "the inability to attain a minimal standard of living [which is] measured in terms of basic consumption needs or income required to satisfy those needs." In addition a number of variables from the Copenhagen Declaration of 1995 on poverty relevant to the South African context are also considered in the analysis of poverty in this study. The study therefore analyses poverty from a more holistic perspective, inculcating both unidimensional and multi-dimensional perspectives using both income and non-income components of living standards.

This study set out to execute the task of answering three types of research questions on poverty in South Africa, using annual data from the South African Reserve Bank (SARB) and IHS Global Insight for the period 1996 to 2013. First, what has been the trend in poverty in South Africa (the contextual research question)?; second, what drives poverty trends in South Africa and how do these drivers influence poverty trends in South Africa (the main research questions)?; and third, which policies could be implemented to mitigate barriers to alleviating poverty (the applied research question)? It should be noted that the data used are an indication of how much of the budgetary allocation at national level actually reaches the communities and individuals to whom the variables apply.

In the review of existing literature on poverty in South Africa, the researcher interrogated a number of variables that are said to affect the core variable of interest to this study – poverty. For example, Klasen (2000, p. 34) includes the following variables in the study's composite

measure of deprivation: "education, income, wealth, housing, water, sanitation, energy, employment, transport, financial services, nutrition, health care, safety and perceived well-being." Finn *et al.* (2013b, p. 2) includes three dimensions (education, health and living standards) with nine indicators – schooling years, and enrolment for education, child mortality and nutrition for health and cooking, sanitation, water, electricity and assets for living standards – for the study's multidimensional poverty index (MPI).

In the process of examining the existing literature on poverty in South Africa and globally; the researcher finds that there is no general consensus on whether poverty has risen or fallen over the post-1994 period. For instance, Leibbrandt *et al.* (2005), Hoogeveen and Ozler (2004) and Leibbrandt *et al.* (2004) argue that income poverty has increased since political transition whilst the UNDP (2003), Van der Berg and Louw (2004), Bhorat and Van der Westhuizen (2010) and Finn *et al.* (2014) argue that poverty has decreased post-1994. It is for this reason that the researcher conducted this research.

Based on the reviewed literature, the researcher formulated seven relational hypotheses for the study. The relational hypotheses maintained that poverty has a negative relationship with education, health, housing and community amenities, public order and safety, fuel and energy, access to credit and unemployment. The study followed Bryman's (2012, p. 161) process of quantitative research (see section 3.4. Research procedure used in the current assignment). Thereafter, the researcher then selected the most relevant research design – a non-experimental correlational design – to guide the implementation of the study. This design shows a relationship, which may or may not be causal, implying that both variables under study may be caused by something else.

The variables used for this study are based on Klasen's (2000) accumulated deprivation index and Finn *et al.* (2013a and 2013b) multidimensional poverty index (MPI). Consistent with the insights in the literature generated by Klasen (2000) and Finn *et al.* (2013a and 2013b) the variables included in this study comprise seven explanatory variables, namely: government spending on education, health, housing, safety, and energy as well as access to credit and unemployment. Whilst the variables used for this study are consistent with the main authors' studies, i.e. Klasen (2000) and Finn *et al.* (2013a and 2013b), this study made use of fewer variables than the benchmark authors. The main reason for this was because of the limited access to the various variables' data points.

The research dissertation made use of a combination of descriptive statistics, line graphs, correlation coefficients and trend analysis when examining whether a relationship exists between poverty and the chosen explanatory variables. The finding of this research dissertation – as based on aggregate-level data – was that there are certain variables that could possibly reduce poverty whilst others are more likely to not reduce poverty. The variables that are found to possibly be able to reduce poverty comprise government expenditure on health, housing, energy, safety and household access to credit to acquire goods to cover their basic needs. All these aspects of government expenditure are found to have a possible positive effect on poverty reduction therefore possibly enabling the poor to escape various forms of deprivation (Results from researcher's statistical analysis; Klasen, 2000, p. 44; Finn *et al.*, 2013b, p.5-7). This is also consistent with evidence from the developing world which has made known that increasing government spending in areas such as housing, health, subsidized credit for poor persons as well as rural infrastructure can improve the welfare of the poor at a relatively low cost (Moll, 1991, p. 16).

The notion of poverty (or wealth) consists of the level of access to the means of satisfying basic needs as well as access to basic services such as energy for cooking and lighting which contribute to the overall psychological and physical well-being of members of a household. However, connectivity (providing households with access to electricity) is only part of the problem. Government still needs to address the affordability issue of basic services. Simply put, other factors i.e. households expenditure patterns, are important factors that need to be examined in order to properly determine changes in individuals (and households) level of energy poverty. This study therefore maintains that the redistribution of assets, such as housing and meeting energy requirements, is an essential component of reducing poverty in the country. However, this study argues that government needs to focus more on the provision of urban land and housing to the poor, in order to facilitate the positive impact of government spending on housing. Government should also address the issue of the ability of households to access credit. This study maintains this as access to credit by the deprived, has been found to be able to improve the deprived quality of life through enabling them to purchase the basic necessities which they would not have been able to purchase had they not accessed debt. Health is also an important factor related to poverty (Shinns and Lyne, 2004, p. 76). Poor nutrition and inadequate health care often result in high levels of deaths and infant mortality. Also, people with low levels of health tend to be absent from work and have low productivity levels; which

can result in low levels of income making the individuals vulnerable to poverty. Successful crime prevention is also found to be central to poverty reduction. Therefore, improving public order and safety has a positive effect on the wellbeing of people. However, it should be noted that varying views of the extent of progress that has been achieved in reducing crime in South Africa are maintained by different surveys. It should also be highlighted the that since "2011 the rate of crimes annual reduction slowed and in the past two years there has been an increase in the most significant categories of crime" (Institute for Security Studies and Africa Check, 2014, p. 5).

To the contrary, through the use of both correlational analysis and trend analysis, this study found that government spending on education total (% of total consolidated government expenditure) does not reduce poverty in South Africa (SARB, 2015). This finding is partly consistent with the findings of Finn *et al.* (2013a and 2013b) and Bhorat *et al.* (2004, p.11) which found that government expenditure on education is not likely to reduce poverty in South Africa. This is because many educated job seekers remain challenged by poverty-related barriers in searching for and finding jobs (Finn *et al.*, 2013b, p. 7). This has resulted in no significant increase in employment contributing to the puzzle of persistently high unemployment (Finn *et al*., 2013a, p.7 and 2013b, p. 7). This is confirmed by the reasonably trivial drop in money-metric poverty headcount ratio (Finn *et al.*, 2013a, p. 7 and 2013b, p. 8). Consistent with the findings of this paper is that unemployment is not likely to increase poverty in South Africa. This is so because of government's extensive social protection schemes which has improved since political transition, post-1994.

Whilst the democratic government has focused on eliminating poverty in the country, this research dissertation maintains that much more still needs to be done to address the challenge of poverty. Specifically, the democratic government still needs to address the massive housing backlog that it inherited (which has caused the mushrooming of informal settlements), improve the rate of annual crime reduction, improve the quality of education outcomes, reduce the disparities in the provision of health care, ensure sustainable energy provision and improve households' access to credit (particularly the poor households). This argument is consistent with several scholars (and international organisations) literature (for example Bhorat and Van der Westhuizen, 2012, p. 21; Finn *et al.*, 2013a, p. 7 and 2013b, p. 7 ;UNDP'S South African Human Development Report, 2003, p. 98). Nevertheless, this research dissertation maintains

that social services have been moderating the poverty-impact of unemployment. This is supported by various scholars (for instance Branson, 2013, p. 3; Finn *et al.*, 2013a, pp. 1 and 7 and 2013b, pp. 1 and 7; Posel and Rogan, 2013, p. 5; Klasen and Woolard, 2008, pp. 17, 30 and 40). The findings do however offer valuable insights into likely relationships, as suggested by the aggregate data. In summary, this research dissertation maintains that although certain variables are expected to reduce or increase poverty, remedial policy interventions by Government and country specific economic structure mitigate these a prior expectations.

5.2. Policy recommendations

From the findings of this study, it is indicated that efforts aimed at alleviating poverty should focus on the provision of energy, safety and security, health, housing and household access to credit.

Government provision of health services improves households' standard of living. This leads to people being healthier and therefore productive, thus making a contribution to the economy through various ways. However, in order to realise this outcome government must work hard at reducing the disparities in healthcare provision, improving the prevention and control of epidemics as well as strengthening health systems management.

The provision of energy by government is instrumental in reducing poverty as it improves the well-being of households and sustains productive economic activity. Firms are able to sustain production, households are able to acquire stable jobs through which they earn income to support their basic needs. Government should however not only look at improving access to electricity, but should also look into the poor's affordability of electricity.

Furthermore, government should focus on developing low-cost homes that are safer and more energy efficient. Although government has sustained its effort of providing housing to the poor, it is also important that government, in its initiatives, ensures accessible, safe and affordable housing. It is also important that when constructing houses, the houses must be constructed with energy efficiency and safety in mind.

In a country known for high levels of crime, government's efforts should continue to focus on combating crime. Such efforts are of importance, especially when taking into consideration the varied views on the extent to which the police has reduced crime levels in the country. Improved

levels of crime in South Africa will ultimately lead to people feeling safer, particularly the poor whom are incapable to enhance the services of police officers by paying for private security.

The government should focus on creating an enabling environment for the poor, to access credit which will enable the poor to purchase the basic consumables which would not have been possible without access to immediate cash. However, a strategy must be put in place to ensure that the poor people who have accessed the credit, are able to repay their instalment in an effort to avoid households getting over indebted. Such a strategy is imperative to prevent the mismanagement of this instrument.

Although government spending on education was found not to reduce poverty in South Africa; this study highlights that there is a need to align the considerably high public spending on education with improvements in educational quality outcomes. This could, in future, result in higher returns on the budgetary investment than presently (in the 21st century).

In terms of future research it would insightful and helpful to scholars, policy makers and implementers to investigate the relationship between multi-dimensional poverty on educational attainment, employment creation and poverty reduction across provinces and municipalities in South Africa.

Ameliorating poverty is a long term exercise. However, scholars (and government) can, at the very least, produce short-term results through the adoption of the aforementioned policy recommendations through the provision of energy, health services, and development of low-cost homes, combating crime and creating an enabling environment for the poor to access credit.

Appendices

Appendix A: Raw data

Lower-bound poverty line *(tlbpl)* – percentage of people living below the lbpl

1996	49.9%
1997	50.2%
1998	52.2%
1999	52.9%
2000	52.3%
2001	51.6%
2002	53.1%
2003	54.3%
2004	51.0%
2005	47.7%
2006	44.9%
2007	43.3%
2008	44.3%
2009	45.8%
2010	39.3%
2011	33.8%
2012	34.0%
2013	34.1%

Source: IHS Global Insight, 2014.

Government expenditure on education *(totedu)* as a % of total consolidated government expenditure

1996	21.2
1997	22
1998	21.3
1999	20.6
2000	20.3
2001	20.4
2002	20.1
2003	19.6
2004	19.5
2005	18.3
2006	18.4
2007	18.1
2008	18.1
2009	18.3
2010	19.6
2011	20.1
2012	19.9
2013	19.5

Source: SARB, 2015.

Government expenditure on health *(hlth)* as a % of total consolidated government expenditure

1996	9.5
1997	9.9
1998	10.3
1999	10.1
2000	9.7
2001	10.3
2002	9.5
2003	9.5
2004	9.4
2005	9.3
2006	9.7
2007	9.9
2008	10.3
2009	10.4
2010	11.5
2011	11.8
2012	11.7
2013	11.6

Source: SARB, 2015.

Household debt to disposable income of households *(hd)* - in R millions

1996	60.7
1997	59.9
1998	59.3
1999	56.5
2000	54.1
2001	54.2
2002	52.9
2003	55.4
2004	58.5
2005	65.5
2006	76.9
2007	84.7
2008	86.4
2009	84.4
2010	81.9
2011	79.8
2012	79.8
2013	79.5

Source: SARB, 2015.

Government expenditure on housing and community amenities *(hs)* as % of total consolidated government expenditure

1996	4
1997	2.8
1998	3.4
1999	3
2000	2.3
2001	2.7
2002	2.7
2003	2.4
2004	2.2
2005	3.5
2006	4
2007	3.9
2008	4.3
2009	4.4
2010	4.4
2011	4.5
2012	4.6
2013	4.8

Source: SARB, 2015.

Government expenditure on public order and safety *(os)* – as a % of toal consolidated government expenditure

1996	9
1997	9.1
1998	9.1
1999	10
2000	9.7
2001	9.8
2002	10
2003	10
2004	9.7
2005	9.6
2006	10.4
2007	10.5
2008	11
2009	10.7
2010	11.2
2011	11.4
2012	10.9
2013	10.9

Source: SARB, 2015.

Government expenditure on fuel and energy *(e)* – as a % of total consolidated government expenditure

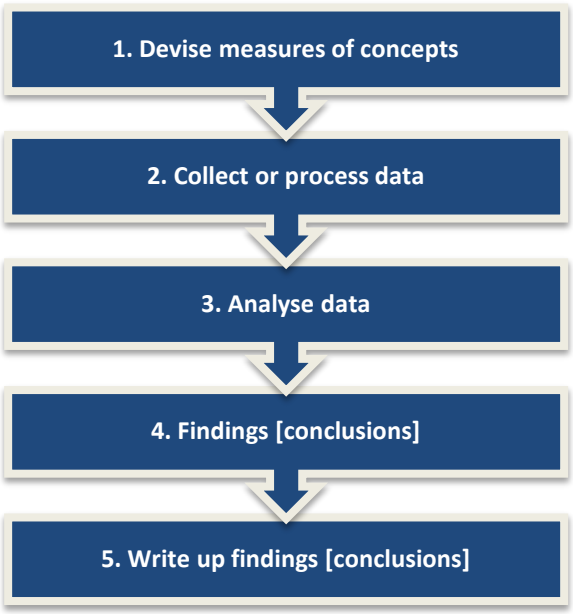
1996	0.2
1997	0.3
1998	0.4
1999	0.3
2000	0.2
2001	0.2
2002	0.3
2003	0.3
2004	0.4
2005	0.5
2006	0.5
2007	0.6
2008	0.7
2009	0.7
2010	0.7
2011	0.5
2012	0.5
2013	0.5

Source: SARB, 2015.

Appendix B: Replication procedure

This section briefly outlines the replication steps that can be employed, when trying to replicate this study's findings. The replication steps are a condensed form of the research procedure steps outlined in *section 3.4* in the document. As is illustrated below, the replication steps start at devising measures of concepts and ends at the write up of the findings/conclusion.

Figure 1: Replication steps



Source: Adapted from Bryman, 2012, p. 161.

1. Devise measures of concepts

This refers to the variables used in the study (both independent and explanatory variables) and the manner in which they will be measured (i.e. exact variable or the use of proxies). Guided by Klasen (2000) and Finn *et al.* (2013b), the researcher made use of the following explanatory variables: government expenditure on education, health, housing, safety, energy, household debt to disposable income of household and unemployment. These variables are used as proxies for education, health, housing, safety, energy and access to credit respectively. The independent variable is poverty, measured by the lower-bound poverty line. This is consistent with the poverty line adopted by the National Planning Commission (NPC).

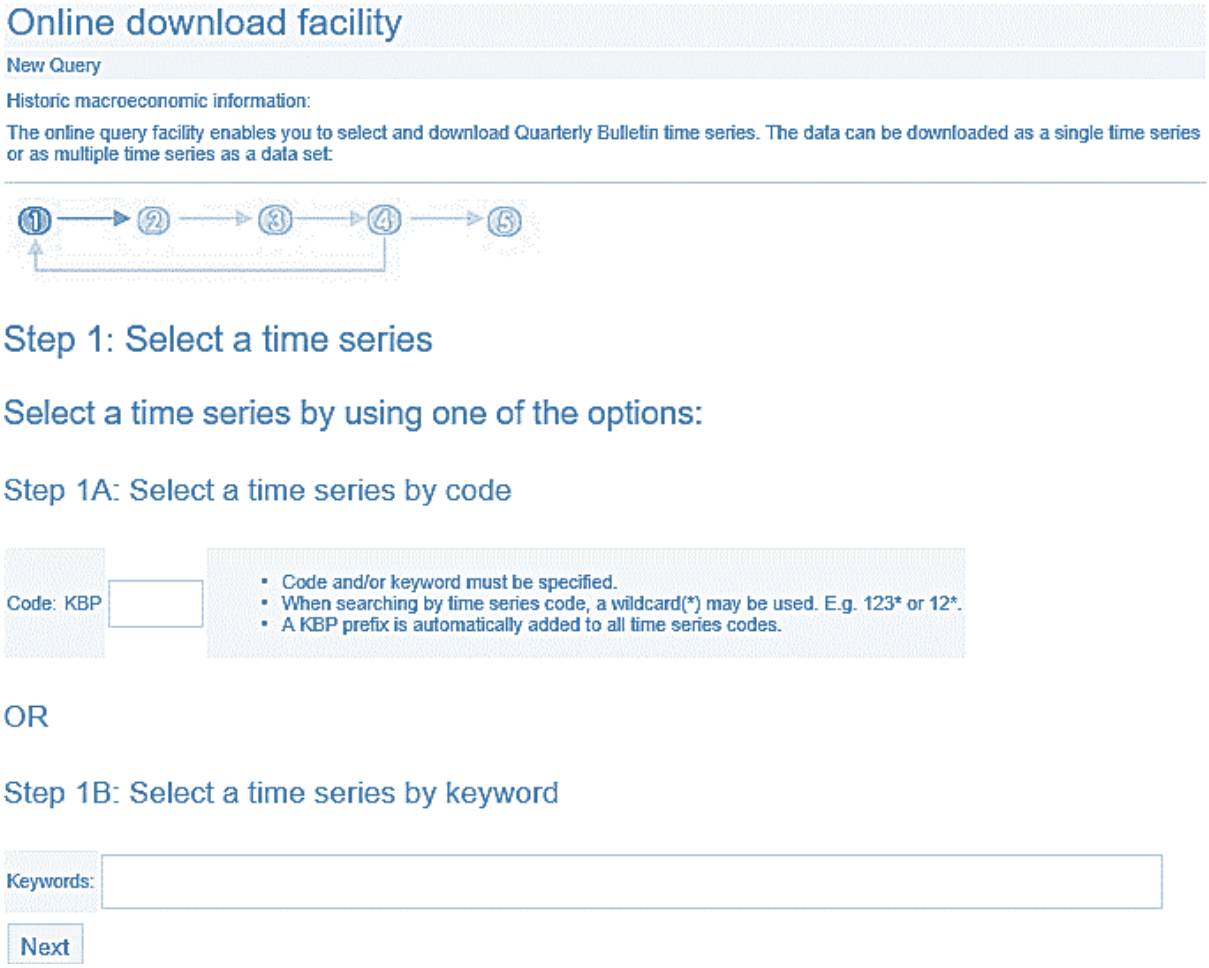
2. Collect/process data

The researcher then collected/processed data of all the variables required. The selection of variables was also guided by reviewed existing relevant literature (*more information on the data sources is discussed in the data section*). The independent variable, the lower-bound poverty line, data points were collected from the IHS Global Insight website: https://www.ihsglobalinsight.co.za

The explanatory variables, on the other hand, were collected from the South African Reserve Banks (SARBs) statistical online query:

https://www.resbank.co.za/Publications/QuarterlyBulletins/Pages/QBOnlinestatsquery.aspx

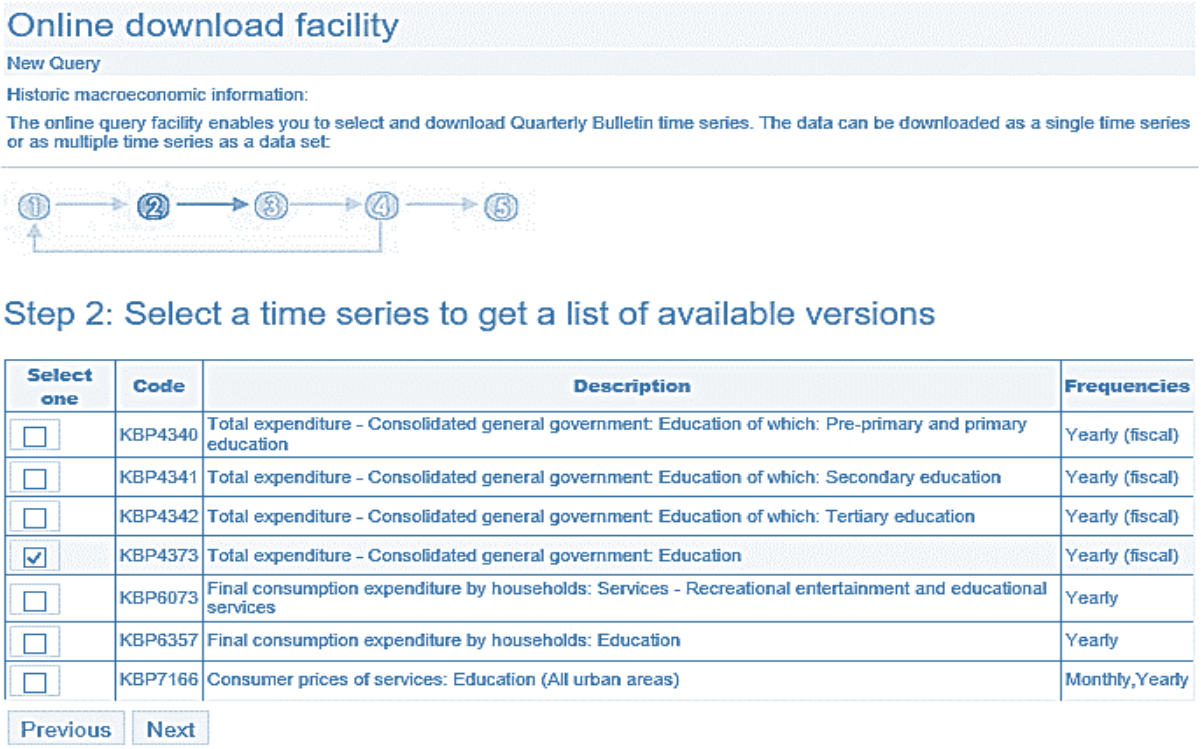
Figure 2: SARB online query



Source: SARB, 2015.

The researcher made use of step 1B: Select a time series by keyword (typing in the respective keyword i.e. education). And then click on next.

Figure 3: SARB online query



Online download facility

New Query

Historic macroeconomic information:

The online query facility enables you to select and download Quarterly Bulletin time series. The data can be downloaded as a single time series or as multiple time series as a data set:

① → ② → ③ → ④ → ⑤

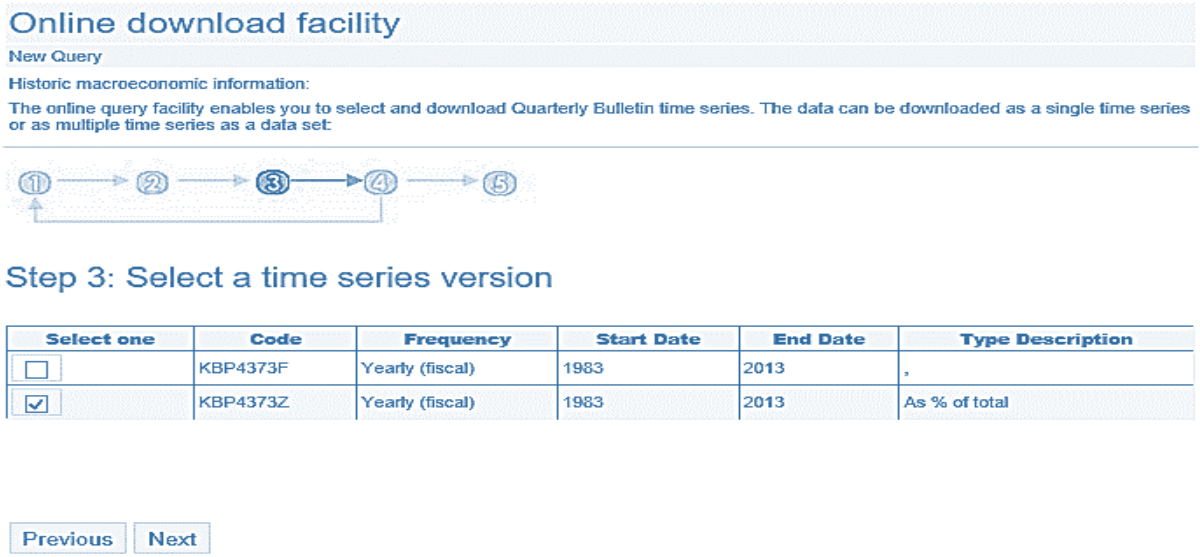
Step 2: Select a time series to get a list of available versions

Select one	Code	Description	Frequencies
☐	KBP4340	Total expenditure - Consolidated general government: Education of which: Pre-primary and primary education	Yearly (fiscal)
☐	KBP4341	Total expenditure - Consolidated general government: Education of which: Secondary education	Yearly (fiscal)
☐	KBP4342	Total expenditure - Consolidated general government: Education of which: Tertiary education	Yearly (fiscal)
☑	KBP4373	Total expenditure - Consolidated general government: Education	Yearly (fiscal)
☐	KBP6073	Final consumption expenditure by households: Services - Recreational entertainment and educational services	Yearly
☐	KBP6357	Final consumption expenditure by households: Education	Yearly
☐	KBP7166	Consumer prices of services: Education (All urban areas)	Monthly,Yearly

Previous Next

Source: SARB, 2015.

Figure 4: SARB online query



Online download facility

New Query

Historic macroeconomic information:

The online query facility enables you to select and download Quarterly Bulletin time series. The data can be downloaded as a single time series or as multiple time series as a data set:

① → ② → ③ → ④ → ⑤

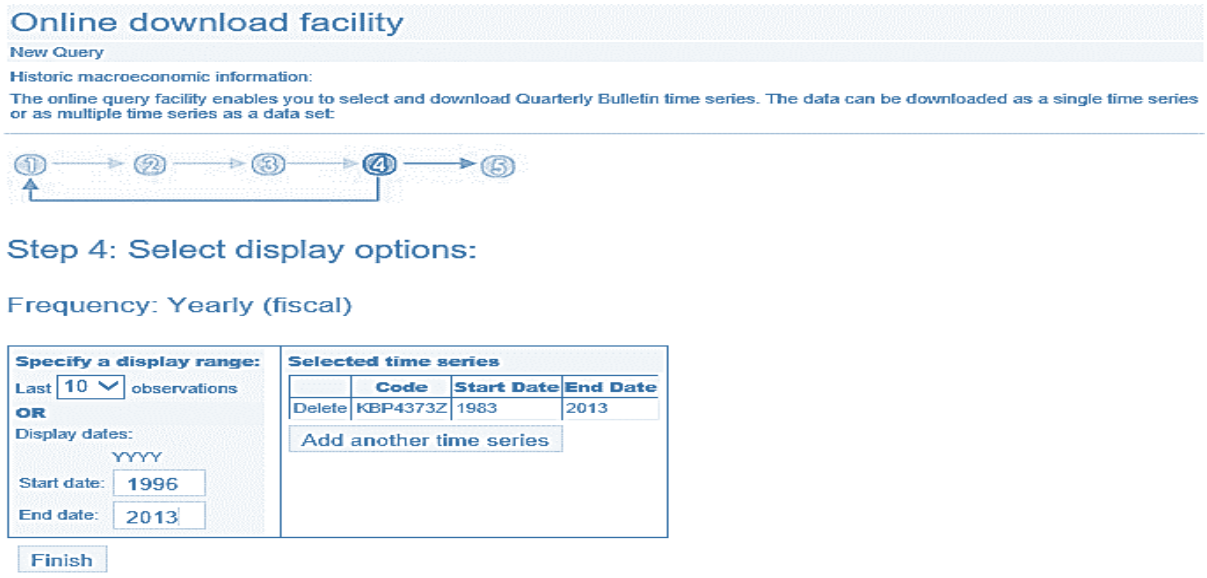
Step 3: Select a time series version

Select one	Code	Frequency	Start Date	End Date	Type Description
☐	KBP4373F	Yearly (fiscal)	1983	2013	,
☑	KBP4373Z	Yearly (fiscal)	1983	2013	As % of total

Previous Next

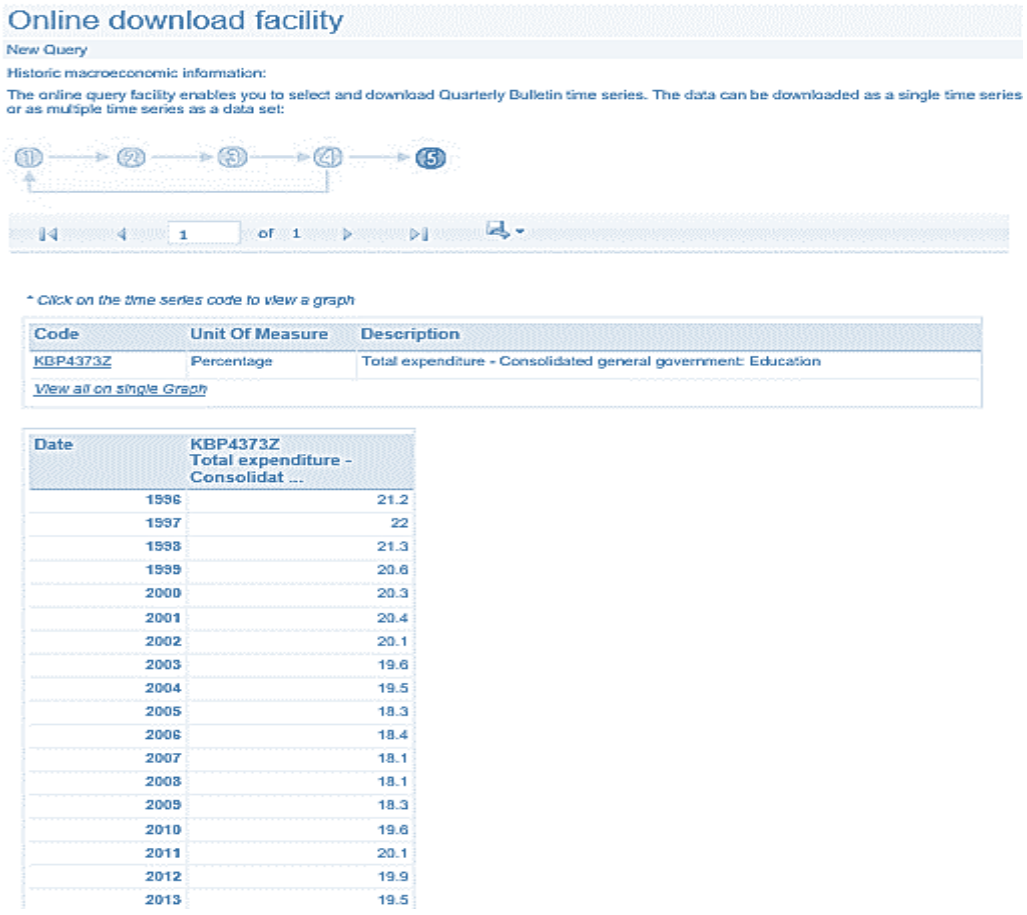
Source: SARB, 2015.

Figure 5: SARB online query



Source: SARB, 2015.

Figure 6: SARB online query



Source: SARB, 2015.

The same steps can be repeated for all the other variables, through making use of the keywords outlined in appendix A.

3. Analyse data

The first technique to data analysis in this study was the use of descriptive statistics. The descriptive statistics were calculated through the use of Eviews 9 (a statistical software). The raw data of the variables used in the study (as outlined in appendix A) are inserted into the statistical programme.

Step 1: Importing data

There are various methods for importing series data in Eviews 9. For the various ways and instructions kindly refer to the following link: http://www.eviews.com/help/helpintro.html#page/EViews%25209%2520Help%2FBasedata.010.5.html%23.

Once the raw data has been imported into Eviews, the following steps are performed so as to arrive to the variables obtained in *section 4.1.1*.

Step 2: Descriptive statistics

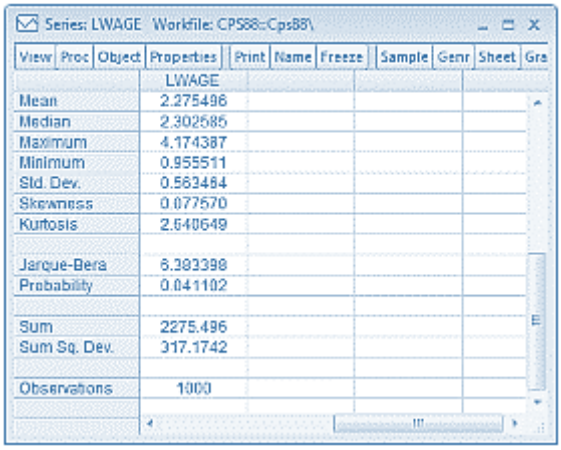
The descriptive statistics can be found through selecting the Stats Table summary statistics for the series (line item two in Figure 7).

Figure 7: Stats table summary statistics for the series

Source: Eviews 9: Descriptive Statistics and Tests, 2015.

The outcome of selecting line item 2: Stats Table will be as follows.

Figure 8: Stats table summary statistics outcome



Source: Eviews 9: Descriptive Statistics and Tests, 2015.

Note: Please note that the above figure is an example and does not outline the findings (or variables) employed in this study.

As depicted in Figure 8, the Stats Table view displays the descriptive statistics for the series in tabular form. Note that this view provides slightly more information than what was used in this research report. For purposes of this research, only the mean, minimum and maximum statistics were used. The researcher then made use of line graphs.

Step 3: Line graphs

Line graphs were sketched using excel. Once again, the raw data (as outlined in appendix A) was used (per variable) to sketch out the trend over time. The short version steps to making a line graph, using excel, are as follows:

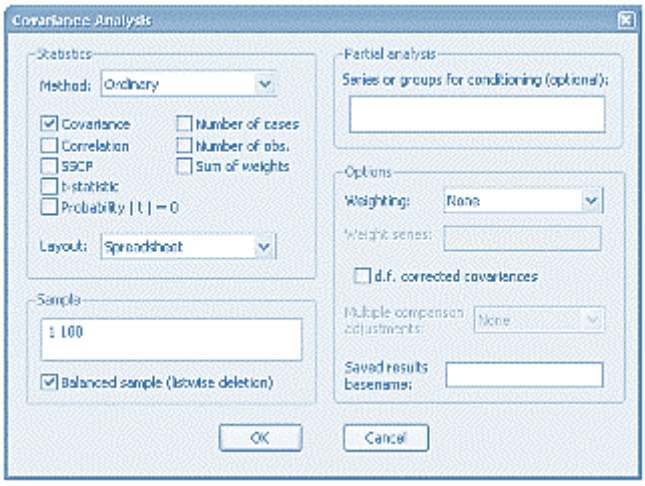
i. Highlight the data to be included in the graph – this must include the row and column headings.
ii. Click on the insert tab of the ribbon.
iii. In the charts box of the ribbon, click on insert line chart icon. This will open the drop down list of the available chart/graph types, from which you can choose.
iv. Click on
v. Label the unformatted graph – which will display the lines representing the selected series of data with a default chart tile, legend and axes values.

Step 4: Cross correlation analysis

The use of a cross correlation analysis followed. This was done simultaneously with the data that was inserted into Eviews 9 to obtain the descriptive statistics (refer to **Step 1**). The following steps were followed so as to arrive at the results.

i. Select all the variables required in the cross correlation matrix.
ii. Open the group object and select View/Covariance Analysis to display the covariance dialog.

Figure 9: Covariance Analysis Dialog



Source: Eviews 9: Covariance Analysis, 2015.

iii. Select correlation and probability |t|=0 and deselect covariance (see Figure 9 above).

4. Findings/conclusion

From the preceding step, the researcher obtained results – from the researcher's statistical analysis. These results were compiled for analysis.

5. Write up findings/conclusion

The researcher makes use of the complied results and writes up the findings, conclusion and recommendations.

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