

An analysis of the poor's demand patterns during rising prices: the case of Bophelong

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DECLARATION

I declare that:

An analysis of the poor's demand patterns during rising prices: the case of Bophelong

is my own independent work, that all the sources quoted have been indicated and acknowledged by means of complete reference and that I have not previously submitted this dissertation for a degree at any University.

Dorah Dubihlela

ABSTRACT

This study investigated the demand patterns of poor households during a period of rising prices. Focus was on three main constructs namely the poor, rising prices and the demand patterns. The study was on Bophelong, a township in South Africa.

This study was conducted from an empirical, quantitative approach which was preceded by a literature review. The main objective of conducting the literature review was to provide a theoretical framework for questionnaire design and empirical work. Cross sectional data was collected at Bophelong households. On completion of the survey, the poor were selected from the non-poor by means of a poverty line. The poor were further divided into two categories, namely moderately poor and the very poor. Moderately poor households were categorised by an income ranging 50% to 99% inclusively of their household poverty line. The very poor households were categorised by an income in the range of 0 to 49% inclusively of their poverty line.

Using the above division, the total poverty rate was 56% of the total sample, 26% being moderately poor and 30% very poor. The poverty gap ratio for all the poor in the sample was 0.48, meaning that on average, the poor needed 48% of their current income to reach their poverty line. This ratio was 0.29 for the moderately poor households and 0.69 for the very poor households. A logistic regression done on the determinants of poverty in Bophelong showed that household size, age of the household head, monthly household income and the employment status of the household head were significant in determining poverty. The monthly average household income in Bophelong was R2 910. For the moderately poor households it was R1 641 for the and R932 for the very poor households. Household size was 3.96 for the whole sample size, 2.97 for the non-poor households, 4.2 for the moderately poor households and 4.7 for the very poor households.

The study revealed that demand patterns of the poor differ from those of the non-poor. In addition the moderately poor households' demand patterns differ from the very poor

household. The greatest part of income of the poor is spent on basic food stuffs. The very poor spent more than half of their income (53%) on food.

The study indicated that bread is a giffen good only to the very poor households where quantity demanded moves in the same direction with price. In the non-poor households, bread is regarded inferior. A commodity can be overly a necessity, but the degree of necessity differs with a households' economic status. In some cases, a commodity was a necessity in the very poor households but a luxury in the non-poor. The way households substitute one good for another depends on their income levels.

In conclusion, the study recommends that for poverty alleviation policies to effectively target the very poor in reducing malnutrition and hunger, these very poor should be studied separately from the poor households. This is because households of different poverty levels face different challenges. A more detailed and deeper study relating to the demand structure of the poor is recommended. There is also a need to explore the survival means of the poor as to direct policy actions aimed at alleviating poverty among the poor in general.

Key Words

Poverty, rising prices, Bophelong, demand, income, price elasticity, nutrition, cross elasticity, regression, income elasticity, South Africa.

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LIST OF ABBREVIATIONS

ADB:	ASIAN DEVELOPMENT BANK
ANC:	AFRICAN NATIONAL CONGRESS
COSATU:	CONGRESS OF SOUTH AFRICAN TRADE UNIONS
CPI:	CONSUMER PRICE INDEX
CSG:	CHILD SOCIAL GRANT
FAO:	FOOD AND AGRICULTURAL ORGANISATION
FGT:	FOSTER-GEER AND THORBECKE
FPL:	FOOD POVERTY LINE
GDI:	GENDER RELATED DEVELOPMENT INDEX
GDP:	GROSS DOMESTIC PRODUCT
GEM:	GENDER EMPOWERMENT MEASURE
GNP:	GROSS NATIONAL PRODUCT
GPL:	GENERAL POVERTY LINE
HIV:	HUMAN IMMUNO-DEFICIENCY VIRUS
HDI:	HUMAN DEVELOPMENT INDEX
HPI:	HUMAN POVERTY INDEX
HSD:	HUMAN SCALE DEVELOPMENT
HSRC:	HUMAN SCIENCE RESEARCH COUNCIL
IEP:	INCOME EXPANSION PATH
ILO:	INTERNATIONAL LABOUR OFFICE
IMF:	INTERNATIONAL MONETARY FUND
IPI:	IMPLICIT PRICE INDEX
LED:	LOCAL ECONOMIC DEVELOPMENT
MDG:	MILLENNIUM DEVELOPMENT GOAL

PPI:	PRODUCER PRICE INDEX
PPP:	PURCHASING POWER PARITY
RDP:	RESTRUCTURAL DEVELOPMENT PROGRAMME
SARB:	SOUTH AFRICAN RESERVE BANK
SPII:	STUDIES IN POVERTY AND INEQUALITY INSTITUTE
SPSS:	STATISTICAL PACKAGE FOR SOCIAL SCIENTISTS
SST:	SEN-SHORROCKS-THORN
STATS SA:	STATISTICS SOUTH AFRICA
TB:	TUBERCOLOSIS
TIC:	TRANSVAAL INDECENCY COMMISSION
UK:	UNITED KINGDOOM
UN:	UNITED NATIONS
UNDP:	UNITED NATIONS DEVELOPMENT PROGRAMME
UNESCO:	UNITED NATIONS EDUCATION AND SCIENTIFIC COOPERATION
UNFPLA:	UNITED NATIONS FAMILY PLANNING ASSICIATION
UNICEF:	UNITED NATION CHILDREN'S EMMERGENCY FUND
UNPF:	UNITED NATION POPULATION FUND
WARP:	WEAK AXIOM OF REVEALED PREFERENCE
WHO:	WORLD HEALTH ORGANISATION
WIC:	WOMEN INFANT AND CHILDREN

CHAPTER 1 INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Poverty is a term whose common language usage has been the deprivation of necessities in order to survive. The broad concept of poverty is ambiguous and capable of bearing conflicting understandings, giving rise to widespread debates on its definition and measurement. These debates on poverty pose a great challenge on the means of eradicating it, because the measures of poverty eradication rest upon its definition and its means of measurement. Despite the debates on definitions and measurements, unanimous agreements exist that poverty is an undesirable social, political and economic phenomenon. There is need however, for proper diagnostic analysis to assist public policy and socio-economic decision-making on poverty alleviation (Osberg, 2007:1).

The challenges of poverty have drawn attention globally while the question of decreasing poverty and reducing inequality between the rich and the poor remains potent, particularly in developing economies. This has impelled the World Bank (2005:1) to emphasise the need to halve the proportion of people in extreme poverty by 2015 as one of its developmental goals. Though a noble objective, recent poverty statistics indicate disappointing results that poverty is apparently rising in developing nations (Anon, 2010:1; Triegaardt, 2007:2). There are worsening poverty situations and resultant socio-economic problems and its evidence is in the spheres of health, nutrition, shelter and provision of water. According to Reyes *et al.* (2010:2) these problems may not only be attributed to the global economic crisis but to other factors as well.

In South Africa, post-apartheid economic policy can undoubtedly be succinctly characterised by an attempt to minimise the level of poverty. Policy objectives in South Africa focus on fighting poverty through appropriate social security measures. This is reflected by the types of policies adopted by the government as well as the rising expenditure on social protection. Projected expenditure on social security alone is estimated to rise to R172-billion in the 2013/14 budget; compared to the R147-billion in

the 2011/12 budget (Gordon, 2011:25). An attempt to account for the present poverty status reveals that past poverty reduction measures seemed to have had very little success in redressing the poverty situation in South Africa (Bond *et al.*, 2010:1).

To fully understand poverty in South Africa a detailed consideration of the political, economic and historical scenario of the country is essential. The past apartheid policies influenced a strong racial rift where the majority of poor were Blacks (Statistics South Africa (Stats SA), 2007:2). Research suggests that these structural socio-economic challenges within the economy continue to deter progressive poverty alleviation policies. Attempts have been made to give a range of crude poverty estimates in South Africa (Stats SA, 2007; Stats SA, 2008; Oosthuizen, 2009). A study by Stats SA (2007:2) indicated that 47.1% of South Africans were poor. High poverty rates existed in the provinces of Limpopo and Western Cape, where poverty was 64.6% and 56.7% respectively while Gauteng had a poverty rate of 24.9% in 2007 (Stats SA, 2007:2).

Studies on poverty hold momentum because of the affliction encountered by the poor. According to the United Nations (UN) (2010:2) the poor's abrupt and unstable income status triggers their suffering during periods of rising prices, forcing them to devise survival means. Reyes (2010:2) points out that poor household's coping strategies differ from those of non-poor households. When prices increase, poor households reduce food consumption and substitute with cheaper products, while the non-poor reduce expenditure on durables rather than on food consumption levels. The International Monetary Fund (IMF) (2011:1) suggests that the poor and the low-income earners will have to grow some vegetables as a hedge against price increases. In the health sector, the poor in rural areas make use of medicinal plants and herbs as means of medication, while the poor in urban areas opt for cheaper generic medication (Reyes, 2010:31). At national policy level, Aron and Kingdon (2007:2) suggest that the poor can only be ameliorated by an increase in government expenditure and investment.

Prices determine the amount and the type of goods demanded. The basic microeconomic theory postulates that at higher prices, consumers generally demand less and in addition to price, the type and use of a commodity matters in determining

consumer behaviour. The theory of conspicuous consumption on the other hand cautions that the economic status of buyers can determine what consumers purchase (Shukla, 2010:1; Woersdorfer, 2005:1). This indicates that the type of goods bought varies from one economic group to another.

Increasing prices affect both the consumers and sellers. According to Ortiz (2011:2) the net consumers' costs caused by increasing prices always overshadow benefits to net sellers, making the overall result of price increases detrimental rather than beneficial to the economy. Furthermore, Prabu (2011:1) posits that the poor are the first to suffer from a price rise and the last to benefit from a price reduction due to poor access of information. Ortiz *et al.* (2011:2) further argues that falling prices tend to be anti-poor implying a lasting harm of price rise to the poor.

The overall price rise impact on the consumers depends on the following issues (Austings, 2008:1):

- Relative importance of different commodities in the production set and consumption basket of different households.
- Magnitude of the relative price change.
- Degree at which households are compensated for price shocks by changes in their incomes, which is the effect on wages and employment originated by price changes. (Austings, 2008:1).

A rise in the general price level is known as inflation. Makinen (2003:1) defines inflation as the sustainable and continuous rise in the general price level or a fall in the value of money. Inflation causes the overall price level to increase in the economy, not an increase in the price of one commodity. In South Africa, general price levels are monitored by the South African Reserve Bank (SARB) through the Consumer Price Index (CPI). The Central Bank is making inflation targeting and thereby price levels top priority even though at the expense of other economic challenges such as unemployment. Butler (2010:9) states that the inflation targeting policy framework has been one of the most significant monetary policy reforms since 1994. Inflation in South Africa has fallen from double-digit levels in the 1990s to well within the 3 - 6% target,

although it has in some years fallen outside the range especially during the period of global economic turmoil (Butler, 2010:13).

According to Rangasamy (2009:2) the South African inflation was fairly subdued and well-established in single digit territory for much of the period up until the 1970s. The average rate of inflation was 4.5% in the 1940s, 3.8 % in the 1950s and declined further to 2.6% in the 1960s. In the 1970s and 1980s, inflation increased to double digit levels averaging 10% in the 1970s and 16.6% respectively owing to the oil crisis during that period and intensification of sanctions against the country.

Aron and Muellbauer (2007:709) further note that from 1980 there have been three distinct monetary policy regimes targeting at inflation in South Africa. The first covered the period 1980 to 1989 when monetary policy had no success in containing inflation. During this period, inflation was high, ranging from 11.5 to 18.6% and the average inflation rate for the decade was 14.7%. The second period between 1990 and 2000, saw inflation falling significantly in the early part of the 1990s to under 10%, subsequently decreasing to 5.2 % in 1999. The third period from 2000 until now saw the SARB in pursuit of an official and clearly stated inflation target (Burger & Marinkov, 2009:1). Inflation averaged 6% between 2000 and 2008 (Rangasamy, 2010:2). During the global economic crisis, inflation in South Africa increased to well above 10%, but has since started to fall with the average inflation rate standing at 5.5% in June 2012 (Stats SA, 2012:1).

The term township and location in a South African context usually refers to the often underdeveloped urban living areas that, from the late 19th century until the end of apartheid, were reserved for non-whites, principally Blacks and Coloureds. These dwelling zones were usually built on the periphery of towns and cities. In these townships, households continue to be caught in the poverty trap from which they are unlikely to escape without appropriate government support (Estelle, 2003:1).

1.2 PROBLEM STATEMENT

Volatile commodity prices continue to threaten food security, survival, nutritional status and livelihoods of the poor. With strained household budgets, less money is spent on

sectors like education and healthcare. Research indicates that the poor spend more than 50% of their income on food, yet these households continue to suffer malnutrition (Braun, 2008:1; Food and Agricultural Organisation (FAO), 2011:14). The finding by the World Bank (2010:1) that malnutrition contributes to more than one third of all under-five deaths in developing nations is of deep concern and perturbing.

Various researchers have further revealed the following:

- 105-million people will be forced into further poverty as a result of food price rises (World Bank, 2010:1).
- 105-million people in less-developed countries had been added to the world's poverty number since 2005 because of rising prices (Ivanic & Martins, 2008:17).
- An increase in world food prices between January 2006 and March 2008 added an estimate of 21-million newly impoverished families (Robles *et al.*, 2008:2).
- A 20% increase in food prices would raise the number of poor individuals by 5.7-million and 14.7-million in Philipians and Pakistan respectively (Asian Development Bank, 2008:20).

In light of the above, a study on the expenditure patterns of the poor at different poverty levels becomes necessary. Determining the goods and services deemed necessary to the poor, the alternatives they have at their disposal and commodity matrices *vis-a-vi* price changes could indicate expenditure patterns of the poor at the different levels. Suitable recommendations will be made to policy makers.

Price movements limit the economic recovery and consign the majority of the population into poverty, inducing inequality and social instability which results in riots and protests (Ortiz *et al.*, 2011:1). The impact is compounded as more people lose purchasing power and are thrust into poverty. At state level, unavailability and poor quality key public goods impact on households; a reason why governments must be concerned with rising levels of inflation (Ortiz *et al.*, 2011:9). Rising prices are also a threat to the Millennium Development Goal (MDG) of cutting the proportion of people who suffer from hunger by halve by 2015.

The majority of studies focusing on the poor and rising prices have been mainly carried out in Asian countries; including Reyes (2010), World Bank (2010) and Asian Development Bank (2008). The results of these studies provide different demand patterns which cannot be assumed in a South African context. In South Africa, a number of researchers have conducted studies on the subject of poverty, of which some have been done in the townships within the Vaal Triangle area. Slabbert (2009) investigated poverty levels in Bophelong, Sekatane (2006) looked at the measurement of poverty in Sharpeville and Masoka (2005) focused on poverty alleviation strategies in Sicelo. All these studies highlighted high poverty levels in the Vaal Triangle townships and much less or no effort has been made to understand demand patterns of the poor at a township level during rising prices. This prompts the need to carry out this study that will focus on the poor's demand patterns in a township in South Africa.

1.3 STUDY OBJECTIVES

The following primary, theoretical and empirical objectives have been formulated for this study.

1.3.1 Primary objective

The main objective of the study was to analyse the poor's demand patterns during a period of rising prices. This was done by analysing price and cross elasticity on different types of commodities. Households were categorised into non-poor, moderately poor and very poor households in the Bophelong Township. For the purpose of this study, a poor household is defined as a household whose income is below its household poverty line. Moderately poor households are characterised by those between 50-99% inclusively of their poverty line and very poor households whose income is between 0-49% inclusively of their poverty line. This differentiation intended to take a closer look at the demand behaviour of households at different poverty levels.

1.3.2 Theoretical objectives

In order to provide background and a better understanding of the study the following theoretical objectives were formulated:

- Conduct a literature review on different definitions and means of measuring poverty.
- Investigate the dimensions and impact of poverty on economies.
- Acquire an understanding of inequality as a cause of poverty and make a clear distinction between poverty and inequality.
- Define inflation, its causes and types of inflation from the literature review.
- Study the determinants and the law of demand.
- Provide an understanding of the types of demand curves.
- Understand consumer welfare economics.

1.3.3 Empirical objectives

In order to aid the accomplishment of the primary objective, the following empirical objectives were formulated:

- Investigate and provide findings on the factors that influence poverty in Bophelong.
- Provide the demographic characteristics of households in Bophelong.
- Profile the household characteristics of the non-poor, the moderately poor and the very poor in Bophelong.
- Determine the sizes and sources of income for households in Bophelong.
- Determine the consumption patterns of households in Bophelong.
- Investigate the differences in the weight of items in the consumer basket of the non-poor, the moderately poor and the very poor households.

1.4 DATA ANALYSIS

The Statistical Package for Social Sciences (SPSS) version 20 was used to analyse the collected data. Frequencies, correlations and elasticities were extracted using SPSS. This was done for the non-poor, the moderately poor and the very poor households. The relationship between income and consumption was noted using the Pearson correlation coefficient. The binary logistic regression model was used to predict possible poverty status of households in Bophelong. Furthermore, a multiple regression model was applied to estimate the determinants of poverty in Bophelong. An elaboration of regression models is done in chapter 6 of this study.

1.5 IMPORTANCE OF THE STUDY

Empirical research on demand patterns can provide evidence on consumers' responsiveness to price and income changes that are useful in designing a country's expenditure policies. Estimates of price and income elasticity in different expenditure categories can assist in setting administered prices and designing subsidies for the poor as well as estimating the impacts of these policies on poverty. Policy makers can also identify which policy interventions are most appropriate in improving the nutritional status of individuals and households. Furthermore, to formulate a long-term policy for poverty reduction in South Africa, there is a need to understand how different groups of households respond to changes in prices.

The effect of rising prices on the expenditure pattern of the poor will highlight the poor's sensitivity to price rises. Consumption changes among different categories of goods will be underlined and goods that show a decline and rise in consumption as prices increase will be noted. This will send a signal to policy formulation on price setting in order to protect the poor. South Africa's economy has been characterised by the majority of its people experiencing high and rising poverty, while the minority enjoys extreme prosperity. Poverty information is well documented and indicate that poverty is still deep rooted in the economy and on the rise in townships. This calls for repetitive investigation into its details. In this context, research on poverty and policy influences remains imperative and relevant as ever.

1.6 RESEARCH METHODOLOGY AND DESIGN

Firstly a literature review, sometimes called 'theoretical study' was done followed by an empirical study. The literature review was instrumental in understanding the variables and in designing the questionnaire for the empirical survey. The theoretical study employed secondary material such as books, publications, internet and other sources deemed relevant. Empirical studies on past researches was done. The empirical study for this thesis was based on a household survey conducted in the township of Bophelong. A total of 315 questionnaires were sent out and 301 questionnaires were properly completed, providing over 95% response rate.

The prices for goods in various categories were collected using the households' questionnaire in Bophelong. This was done using the price of an item paid by different households. The impact of rising prices on households was accessed by utilising households own perceptions. Since South Africa does not have an official poverty line yet, the poverty line used in this study was adopted from the study by Hoogenveen and Ozler (2004:7) and Stats SA (2007:8). Hoogenveen and Ozler (2004:7) agree that South Africa should have two poverty lines, the lower band of R322 and the upper band of R593 per capita per month using 2 000 prices. The rationale behind choosing using two poverty lines in South Africa is based on the fact that South Africa has a dual economy. The lower band was used and adjusted for inflation. This resulted in the poverty line of R584 per capita per month which was used for this study.

The following demand patterns were deemed important in this study and therefore considered during rising prices:

- Different food categories
- Energy prices
- Social-club contributions
- Alcoholic beverages/cigarettes and tobacco
- Transport

In observing these responses, interest was drawn onto the alternative means used by households during rising prices.

1.7 CHAPTER OUTLINE

This thesis is divided into seven chapters as follows:

Chapter 1 Introduction

This chapter studies the background, scope of the study and the research methodology adopted. It will also define the problem statement of the research.

Chapter 2 Theories of poverty

This chapter provides a theoretical background on poverty. Definitions, measurement methods, dimensions and urban poverty will be studied.

Chapter 3 Theories of consumer choice and demand systems

This chapter looks at the theory of demand. Types of demand curves, the law of demand, conspicuous consumption and the drive to demand is studied.

Chapter 4 Inflation: A literature review

Inflation is defined in terms of price rises. The definitions, types and the effects of price rises are dealt with from a theoretical perspective.

Chapter 5 The profile of Bophelong

The chapter presents the results of the empirical study. The demographics of Bophelong are shown.

Chapter 6 The poor's demand patterns during rising prices in Bophelong.

The changes in the expenditure pattern of the poor are presented based on the empirical research results. This basically is the consumption reactions. The response of the poor during the time period of the study is presented in terms of price, cross and income elasticity of demand.

Chapter 7 Summary, conclusion and recommendations

This chapter provides an overview of the study. Conclusions are drawn, together with the recommendations originating from the study. Limitations and further implications for further research are highlighted.

CHAPTER 2: THEORIES OF POVERTY

2.1 INTRODUCTION

Poverty has been a matter of concern to policy makers, researchers and social scientists (McDonald, 2005:2). How people perceive and understand the construct of poverty depends on individuals. As a result, various paradigms are developed based on the diverse disciplines, research focus and interests. Alongside with poverty research, significant literature exists pointing out diminutive harmony on poverty definitions, poverty measurement and types of poverty. The definitions of poverty are still evolving, creating new ground for research and focus on the subject, and thereby making poverty studies endless. Nevertheless, poverty reduction and poverty alleviation moves are generally acknowledged as critical socio-economic focus (Øyen, 2005:2).

The question of reducing poverty today is inevitable and plays a primary role in the economic policies of developing countries (Riccio *et al.*, 2010:13). To introduce effective strategies to combat poverty, it is essential to reach an understanding on its definition in order to make arrangements for evaluation and monitoring of policies. Consensus on this is far from being reached because of differing poverty concepts and indicators that exist alongside each other, hence a unanimous recognition of poverty as a multidimensional concept (Razafindrakoto & Roubaud, 2003:1). This presents a challenge in the way poverty is defined and measured across the globe.

In South Africa, diverse measures of poverty have been developed and used by various researchers and government departments. This ignores the terms of the 1995 Copenhagen Declaration, where South Africa committed itself to adopting an official measure of poverty (Noble *et al.*, 2004:4). This has led to dissent and confusion on the actual levels, extent and nature of poverty in South Africa. There is also a lack in clearly distinguishing between conceptualisation, defining and measurement of poverty, just like in most developing nations (Studies in Poverty and Inequality Institute (SPII), 2007:16).

This chapter provides a theoretical framework of poverty. It begins by exploring the history of poverty studies before moving on to the definitions, causes and measurements of poverty. Inequality, as the cause of poverty is also articulated upon in this chapter.

2.2 RESEARCH ON POVERTY

Poverty has drawn wide research interest on a global scale, both at a micro and macro level. Micro analysis of poverty deals with individuals, towns or cities, while macro analysis of poverty draws a single poverty line for the whole economy. Micro poverty analysis runs the risk of seeking to alleviate poverty through local-level initiatives without paying much heed to the macro environment (World Bank, 2003:5). The World Bank (2003:5) further notes that micro-level initiatives alone are inadequate to address the issue of poverty. However, these initiatives could play an important role in the effort of poverty alleviation through their links with the macro perspective.

Numerous beliefs have been developed since the evolution of poverty studies. Poverty is understood as an extremely complex phenomenon that cannot be described through a limited set of variables. Researchers therefore, need to consider several factors if poverty is to be properly diagnosed and understood. The causes of poverty and its manifestations are found in the diversity of cultural factors; and the present poverty picture is a conglomerate of researches of varying quality, political statements and agendas (Øyen, 2005:2).

On the same note, poverty research has been well acknowledged by Øyen (2005:2-3) who asserts that past poverty research has attempted to sort out certain variables for inspection, attempted to follow limited casual factors and concentrated on certain strategies for poverty alleviation. In reality, only certain aspects of poverty have been studied at a time. The analysis of poverty in smaller segments results in the presentation of a limited and skewed picture where only specific inconclusive research targets are followed. In line with this, poverty reduction strategies are based on assumed causes that lead to a concentration on particular strategies for poverty alleviation (Øyen, 2005:2-3). The following section analyses the early poverty studies in

the world, organisations interested in poverty studies and poverty studies in South Africa.

2.2.1 Early poverty studies

The beginning of the 16th century saw a number of researchers focusing on poverty in Britain, analysing its dimensions, causes, and possible means of poverty alleviation. These early poverty surveys covered considerable ground in defining poverty, measurement methods and identification of poverty causes which form the basis of poverty research still applicable today (Glennerster *et al.*, 2004:15).

In the 20th century, Rowntree (1901) conducted a survey involving nearly 2 000 workers and gave early poverty estimates of 14% of the sampled population in New York. This was obviously not sufficient to reveal the true poverty rate since the most vulnerable to poverty; the unemployed were excluded from the survey. A decade later, Bowley (1912-1913) carried the same survey and reported different results. One reason for the variation in results was that different poverty lines were used by the two researchers and each researcher invented a poverty line which best suited their research focus. Rowntree (1901) suggested that a poverty line should consider minimum needs and be linked to the household income. These early researchers noted the need to equate household income with minimum needs depicted by a food basket and also that needs vary due to differences in household structure.

Following the realisation of poverty in the United Kingdom (UK), efforts were made to reduce its effects and to find ways of dealing with it. Accordingly, the UK government of 1906 made some reforms which included the introduction of free meals at schools, together with the old age pension (Brewer & Gregg, 2001:1). The first half of the twentieth century saw a transformation in government social welfare policy. These benefits were paltry but nevertheless, they were a good start. It was not easy to know if poverty disappeared or reduced due to lack of proper definition of the term (Brewer & Gregg, 2001:1).

Bowley's later research in northern towns showed significant local differences in poverty rates during 1912-13. His poverty rates varied between 4.5% of the population of

Stanley and 19% in Reading (Gazeley & Brighton, 2007:2). Several researches were conducted on poverty and have also labelled the term objective in nature.

Poverty studies clearly validate that the concept of poverty is arguable in nature. There exist complications and frustrations in poverty research, with Wilson (1987:141) arguing that these lead to 'discourses of poverty' in the research domain. According to Madden (2002:2) the peak of poverty research was reached after a study by Townsend (1979) which can be regarded as the research that paved a way for studies on consensual poverty. This study was a reaction to Rowntree's (1901) conceptualisation of poverty as absolute.

2.2.2 Major organisations researching poverty

Research on poverty during the past years has presented partial results, not inclusive of everything on poverty and the rate has increased in such a way that it is not possible to give a full account. In reality, a bias exists in definitions, alleviation means and measurements which are often studied separately in any given poverty study (O'Connor, 2000:557). Although several research institutions have been involved in poverty research with different interests and diverse focus areas, none of them would claim to have all answers. Some of these institutions are given below together with their contribution in poverty studies.

- The United Nations Social Summit Copenhagen 1995 put poverty high on the agenda. The United Nations Development Programme (UNDP) has influenced poverty research worldwide through their annual reports and extensive developmental initiatives (Øyen, 2005:12-15).
- The World Bank's paradigm of economic growth as the major poverty reduction strategy has dominated the economic and human science research focus (Adams, 2003:1; Olarra-Gambi, 2003:1).
- The Food and Agricultural Organisation (FAO) has put structural differences between rural and urban poverty and advocates for different poverty alleviation strategies for rural people compared to urban slums (Rural Poverty Report, 2001:2).

- The United Nations International Children's Emergency Fund (UNICEF) has produced rich literature on poverty conditions relating to children deprived of care, nutrition and rights (UNICEF, 2005:6).
- The United Nations Education and Scientific Cooperation (UNESCO) has a programme on human rights and poverty based on research about primary education with special emphasis on poor children (UNESCO, 2002:2).
- The International Labour Office (ILO) bases its research on those marginalised or working under intolerable conditions in the labour market as an important determinant of poverty (Ferge *et al.*, 2002:2).
- The World Health Organisation (WHO) has taken major action against diseases such as Tuberculosis (TB) and Human Immuno-deficiency Virus (HIV) which are typically poverty-related diseases (WHO, 2004:2).

In the poverty research journey, new poverty definitions and measurement methods have emerged, creating new areas of research to be explored. When new means of measuring poverty were developed, an overall revamp of the poverty rates developed (Leibbrandt, 2011:2). The issue now is to know where these poverty studies are leading to and whether there will be a universally accepted theory on poverty. Arguments on poverty are necessary in that they add to the existing body of knowledge and create new grounds of study since poverty has proved to take different forms overtime (Slabbert, 2004:4). Varying forms of poverty exist within nations; hence the sub-sections below analyses poverty literature in South Africa.

2.2.3 Poverty studies in South Africa

South Africa has had a good track record of research on poverty long before the democratic government (Øyen, 2005:61). As early as 1906, the government of the day received a report from the Transvaal Indecency Commission (TIC) which was appointed to investigate the causes and the means of dealing with poverty (Øyen, 2005:61). The main focus of the study was on poverty among Whites, paying little attention to poverty among Blacks (Vosloo, 2011:1). The approaches that have been taken by South Africa

to fight poverty lay deep in both the institutional history and the current economic dynamics (Glennester *et al.*, 2004:15).

The first Carnegie Commission Inquiry of 1928 carried an investigation on the poor White problem (Wilson, 1996:229). The commission was criticised on the limitations of its focus on Whites only, and findings were used to promote strategies that reduced White poverty at all costs, often at the expense of Blacks (Wilson & Ramphela, 1989:X). In addition, there was an introduction of the apartheid policy in 1948 which was effectively an anti-poverty strategy to empower only the White minority (Øyen, 2005:61). Under this policy, Blacks were oppressed in most spheres of life including education, employment and access to services thereby increasing poverty among the Black majority. The Carnegie Commission of the 1930s, although it was stricken by severe racial restrictions, made important intellectual contributions to the understanding of poverty. Despite a wide concentration on poverty among the White population, MacMillan (1930), Batson (1942) and Burger (1943) carried out research on poverty among Blacks and discovered a higher poverty rate compared to the poverty rate among Whites.

In the 1980s, poverty among Blacks was put on the national agenda by the second Carnegie Inquiry, nearly 50 years after the first commission and included all South Africans, both Black and White although the effect of poverty transpired mostly among the Black population (Anon, 2001:14). Criticisms arose citing that the inquiry was not provided with the clear definition of poverty. Slabbert (2004:27) further noted that this inquiry was criticised by the World Bank economists in that it produced unreliable evidence.

The commission's inquiry emerged with different facets of poverty. During the same inquiry, the concept of poverty research expanded into three stages which were causes, facts and strategies. Meaningful research had to find ways of preventing and alleviating poverty and therefore, facts and analysis of causes were vital (Wilson, 1996:233). At the beginning of 1992, the African National Congress and the Congress South African Trade Union (ANC-COSATU) delegation of politicians and trade union asked the World

Bank to focus on poverty in South Africa. They made it clear that poverty must be made a top priority on the country's agenda and this led to the development of the Project for Statistics on Living Standards and Development (Øyen, 2005:62).

By the end of the 20th century to the start of the 21st century, research on poverty was spread over universities, government institutions and research entities with an enviable move to generate and analyse data. Prominent researchers of the time included May (1998) who provided a comprehensive document on the analysis of poverty and inequality in South Africa. Following this, several researchers dwelt on the subject including Borat (2005), Slabbert (2003; 2009), and Stats SA with numerous publications.

With the coming in of the democratically elected government in 1994, poverty studies became less politically inclined and followed more or less the pattern of international poverty studies conducted by the World Bank (Slabbert, 1997:34). There was a fruitful collaboration by the African Economic Research Consortium and South African Department of Labour in one project that analysed the links between poverty and the labour market. To academics, this was seen as a precipitous climb up the learning curve. Research concentrated on establishing the extent to which the pro-poor policies of the 1994 government have impacted the lives of those enduring poverty. Efforts by the government included the roll-out of infrastructure for the provision of basic services to the majority. According to Øyen (2005:63) this is evidenced by the increase in the number of people with access to electricity from 58% to 70% between 1996 and 2001. Stats SA (2012:1) reported that over 82.7% of South Africans had access to electricity in 2011. However, there was deterioration of roads in rural areas, reserves and Bantustans, widening the gap between the rich and the poor, urban and rural in the then new South Africa. The government had put emphasis mainly on growth policy, housing, free basic services and social protection as a way of alleviating poverty.

Current poverty research in South Africa mainly reports on its chronic nature. At a national level, anti-poverty strategies that have been recommended and implemented include welfare programmes, elimination of racial lines in the employment sector and

the provision of basic services to the majority. There is need to further reform anti-poverty strategies, especially in the aftermaths of the severe recession that started in 2007. Van der Berg *et al.* (2011:3) investigated poverty in South Africa and discovered that a low education level is a cause of chronic poverty

Poverty researches conducted in the past have brought to harmony the fact that poverty is not easy to define and comprehend. The problem with defining poverty has also brought equal challenges in the means of measuring it since the means of measurement largely depend on how poverty is defined. The sections below attempt to give an overview of the definitions of poverty.

2.3 DEFINING POVERTY

Many factors have led to a general recognition of poverty as a complex concept, which lead to conflicting understandings among academics, theorists, politicians and researchers (Bhorat *et al.*, 2003:6). Its multidimensionality constitutes a clear breakthrough in the traditional definition of the concept, where researchers have come to the understanding that the treatment of poverty does not lie with income only but requires a broad approach (Cemafi, 2003:2). Definitions of poverty are also critical to political objectives, policy focus and research objectives and value judgments are involved (Allen & Thomas, 2000:7). In reality, discourses in poverty definitions are common and necessary to enable a broader understanding of the term. Due to lack of distinction between poverty definition and measurement, the following subsection gives the problems encountered when defining and measuring poverty.

Before defining poverty, Bellu (2005:9) suggests that the following steps should be taken in order to make the definition meaningful. The table below provides those steps according to Bellu (2005:9).

TABLE 2.1 STEPS IN DEFINING POVERTY

Step 1	Analyse the environment in which poverty is to be defined. Modify the concept of poverty to the context by using relevant socio-economic variables.
Step 2	Choose the dimension of the analysis. A single point in time? Over time? Over space? Refer to the results of Step 1
Step 3	Define the economic resources for which lack of command is causing inability to achieve acceptable standard of living. Income? Goods? Take into account the results of Step 1
Step 4	Select the best indicators within those listed in Step 2. Define whether the approach should be one dimensional (e.g. income) or associated to other social indicators (e.g. health status, education level, etc)
Step 5	Choose the concept of poverty. Absolute or relative? Consider Step 1 intervention can be enforced

Source: Bellu, 2005:9.

2.3.1 Problems associated with defining and measuring poverty

The conceptual debate on the definition of poverty is transferred to the never-ending debates on how it should be measured. This problem arises because literature on poverty contains little distinction between poverty definition and poverty measurement. The following challenges are usually encountered when trying to define and measure poverty;

Firstly, Laderchi *et al.* (2003a:3) highlight the dilemma of space in defining and measuring poverty. This involves whether the definition should be restricted to material,

social or cultural lack in life? The problem further queries the indicators to be captured in defining and measuring poverty?

Secondly, should poverty be measured at individual or household level? Early poverty measurement was done at a household level (Rowntree, 1901). Other analyses disintegrate to individual levels so as to capture intra-household factors; different types and causes of deprivation affecting individuals. This integration aids in capturing the existing inequality in household property allocation since in a household; property is not evenly distributed, where some household members own more property than others (Woorlard & Leibbrandt, 1999:33; Maxwell, 1999:2).

Thirdly, there is a question about whether to consider monetary only (one-dimensional) or include non-monetary components such as exclusion health and deprivation (multi-dimensional). Defining and measuring poverty in monetary terms identifies poverty with a shortfall in a monetary indicator. Non-monetary measures include other factors like networking and deprivation (Bellu, 2005:7; Laderchi, 2000:3).

Fourthly, there is dissent over the timeline in the definition and measure of poverty because people are constantly coming in and out of poverty over time. According to Muwanga (2001:17) when some people get into poverty, others get out of it, and sometimes the same people get in and out of poverty. The question posed is whether the definition should be based over a month, a year, or a longer period of time? These considerations do not apply to all approaches equally, as some like capability, social exclusion and race might have a long-term impact or can be structural in nature (Laderchi, *et al.*, 2003a:6).

Fifthly, the question is raised whether the stock or flow of material should be used in the measures of poverty. Income definition of poverty focuses on the flow of material goods and services. An alternative is to examine the stock of resources a household possess as measured in terms of physical or monetary assets (land, property), or in terms of social capital (social contacts, networks, community membership) (Laderchi, *et al.*, 2003a:3).

Sixthly, there is a question on how to discriminate the poor from the non-poor through the use of poverty lines. Which poverty line should be adopted and how should it be defined in terms of the threshold between the poor and non-poor. At one extreme, the poverty line between poor and non-poor is defined with reference to some summary measure of the overall distribution, thus mean income (Jin *et al.*, 2011:38). On the other extreme a poverty line is set in terms of minimal requirements using the absolute terms on the basis of some needs of the individual deemed as essential for survival (Laderchi *et al.*, 2003a:4-5).

Definitions and measurements of poverty depend on the purpose of the research as well as the availability of data. The approaches differ within nations and societies creating problems in translating their applications and modifications. To some extent methods are society specific (Laderchi *et al.*, 2003a:3). Despite emerging literature on the multidimensional nature of poverty, there still exist the problem of defining these dimensions and the sets of poverty indicators. However, studies on poverty tend to be biased toward traditional economic indicators (Muwanga, 2001:15).

Muwanga (2001:16) suggests that the problems in defining and measuring poverty necessitate the need to further broaden poverty scope. Due to its variability, incorporating the challenges will provide new study grounds. It becomes clear that definitions and measurements based on income and expenditure only are not equipped to communicate important differences between the poor and the non-poor. There is however, a need to develop a universal definition and measurement means to enable comparison worldwide.

2.3.2 Common approaches to defining poverty

According to De Walt (2004:1) definitions of poverty differ between individuals. For example, May (1998:38-48) notes that poverty definitions given by the poor differ from those given by the non-poor. According to the poor, poverty is defined as isolation from society, lack, low wage, unemployment, poor nutrition and having too many children among others. To the non-poor, poverty is lack of income.

Langmore (2000:37) defines poverty as lack of participation in decision-making, a violation of human dignity, powerlessness and susceptibility to violence. According to Duclos and Gregoire (1998:3) poverty is the lack of resources, voice and power to obtain a diet and participate in the economy. This lack can lead to economic dependence and subjection to exploitation.

Laderchi *et al.* (2003a:4) imply that poverty does not result from the lack of one thing but from a bunch of factors and resources among the poor. This lack of resources makes the poor suffer a lot of physical, material and social costs. Woolard and Leibbrandt (1999:6) view the inability to afford basic consumption needs as an experience of poverty. These needs can result in hunger as evidenced by meal skipping and nutritionally inadequate diets (Duclos & Gregoire, 1998:2). Most researchers define poverty in terms of hunger, poor health, lack of adequate clothing and poor housing conditions. Collectively these are called poverty indicators (Langmore, 2000:39).

Poverty leads to feelings of being disenfranchised from various support systems (Tilakaratna & Satharasinghe, 2002:2). A number of implications of poverty are carried by this definition including failure to participate and the feeling of disempowerment to obtain resources. The World Bank (2001:1-2) defines poverty as a situation where one lacks command over commodities that are deemed essential to constitute a reasonable standard of living in a society or the lack of ability to function in a society. This definition emphasises command over resources added to the lack of participation or voice in governance and civil matters. For many people poverty is a situation from which it is very difficult to escape, most definitely illustrated by deprivation which is transmitted from one generation to the next (Hulme & McKay, 2005:2).

The question arises as to why do we need to define poverty? De Walt (2004:2) notes the importance of understanding poverty stems from the need to fight it. The development of strategies for its reduction requires an informed understanding of the problem because there might be a mismatch in the poverty alleviation means and the real cause of poverty. According to the (SPII, 2007:20) clarifying what poverty means can contribute to effective poverty eradication in the following ways:

- The ability to define and measure poverty can assist in the geographical mapping of the severity of poverty thereby allowing for optimal direction of resources.
- By understanding the various dimensions of deprivations experienced by people living in poverty, government can focus its resources on specific programmes such as housing, basic services etc.
- Having a poverty measure can allow for the evaluation on the effectiveness of poverty alleviation programmes and the number of people moving out of poverty and improving their wellbeing, both in the short-term and over an extended period of time.
- By placing information about the levels of poverty and the resultant inequality in the public domain, a national commitment to eradicate poverty emerges that goes beyond government scope (SPII, 2007:20).

Due to the multiplicity in the definition of poverty, the following approaches to the understanding of poverty are discussed; the absolute, relative, social exclusion, capability, participatory and the human scale development approach.

2.3.2.1 Absolute approach

According to SPII (2007:24) this is an income-related definition which sees poverty as a lack of sufficient income to basic life necessities. The concept of absolute poverty is based on the notion of subsistence, thus not having sufficient to satisfy basic needs. In this case, the poor are those living below subsistence levels (Noble *et al.*, 2004:6).

Absolute poverty can be defined by reference to a certain quantitative measure. This measure is usually based in the cost of purchasing a minimum basket of goods required for human survival. This basket marks the General Poverty Line (GPL) measured by the value of goods and services subjectively determined for minimum consumption. The selection of these goods varies within countries but the agreement is that the basket should only consist of the minimal goods needed for food need. Extreme poverty is measured by the Food Poverty Line (FPL) where individuals in extreme poverty are

below the (FPL). This is the food basket deemed minimum for survival (Upadhyaya & Ouchi, 2006:25).

Oosthuizen (2002:3) distinguishes these two poverty lines by the use of the basic needs approach. This approach first estimates a food poverty line, and then revises this line up to cover non-food expenditure. The estimation of the food poverty line has four basic steps; the estimation of the population's energy requirements, the choice of a reference group, establishing the contents of the food basket and the cost of the food basket. In its most basic form, an individual's ability to satisfy his or her nutritional requirements is deemed an indication whether or not that individual is poor (Oosthuizen, 2002:4).

The absolute definition of poverty was elaborated on by the United Nations' (UN) declaration in Copenhagen in 1995. This declaration defined poverty as a situation characterised by harsh denial of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education, participation and information (UN, 1995:2). Poverty from this perspective not only depends on income but also on access to services and nutrition (Oosthuizen, 2007:3).

According to Ikejiaku (2009:2) absolute poverty can be measured using an absolute poverty line. This line estimates the cost of a bundle of goods deemed to ensure that basic needs are met. Woolard and Leibbrandt (1999:5) point out that achieving basic needs is innermost to the definition of poverty and focus is on the actual needs of the poor and to their expenditure patterns. In developing countries, basic needs mainly consist of food expenditure and the poverty line used is the amount of money needed to buy enough food to obtain the minimum diet (SPIL, 2007:28).

The poverty line changes over time. Determination of the new poverty line requires the revision of the subsistence minimum diet, based on the latest information about nutrition, consumption expenditure and prices of more recent years. According to Sabry (2009:5) poverty lines and other measures of poverty used by countries are considerably lower than the consumption expenditure happening. This suggests an underestimation of the actual level of poverty. One approach to defining a poverty line is

to identify the characteristics of a full or decent life, or more ambitiously a good society, then set deprivation in relation to this.

The World Bank (2001:2) commonly makes use of a basic income poverty standard. Using this, a person is defined as poor if their income is below US\$1 or more specifically \$1.08 per capita per day in 1993 purchasing power parity (PPP) terms (Alcock, 1993:70). This amount was derived by using national poverty lines for 33 countries, with the international line derived as the median of the 10 lowest poverty lines. An upper poverty line set at twice this level, \$2 a day corresponds with poverty lines used in middle-income countries. The \$1 and \$2 per day poverty estimates are mainly useful as indicators of global progress in poverty reduction and for cross-country comparison compared to national poverty lines. The latter however, covers countries at significantly different stages of development (Ravallion *et al.*, 1991:2). This measure has however, been revised to \$1.25 a day measured in 2005 prices (World Bank, 2005:6). The global economic turmoil which started in the US in 2007 made the lower poverty line to be revised to US\$1.45 per day using the 2005 (PPP) (UNDP, 2011:6).

According to SPII (2007:29) no proposal exists to which goods should be included in the consumer basket. Minimum diets costs may vary among households as they do not all share the same preferences of nutrition patterns (Bellue, 2005:8). Absolute poverty also pays little attention to differences in the expenditure patterns of diverse groups of the poor or differences in the costs they face. It fails to accurately differentiate between rural and urban areas and also to recognise the differences in livelihoods. Different prices are paid for goods and services and as such fails to provide a benchmark (Mitlin & Satterwaith, 2002:1). Urban dwellers experience some costs that are not incurred by rural dwellers. These can be in the form of high densities and large population concentrations lacking adequate provision of water, sanitation and drainage. This increases the risk for diarrhoeal diseases, intestinal worms and many other health risks (Hardoy *et al.*, 2001:3).

Advocates of absolute poverty have brought the following points to support their views:

- Absolute poverty is objective and has a scientific notion and therefore easy to measure. Poverty is measured by the minimum subsistence level and therefore any households earning below subsistence can be categorised as poor (Noble *et al.*, 2004:7).
- Absolute poverty threshold applies the same standards across different locations and time periods, thus making comparisons suitable and easier (Alcock, 1993:68).
- Absolute poverty attempts to define the poor not in terms of being well-off but in terms of the poor themselves (Alcock, 1993:69).

Despite the above, the absolute approach to understanding poverty has been criticised on the following grounds (Williams, 1998:7-8):

- If a family is described as poor by not affording food, then by these standards, there is very little or no poverty in first-world nations since many can largely afford food.
- In the real world, different cultures, technological and developmental levels, time periods and geographical locations make this measure difficult.
- For the measure to be absolute, the currency must be the same in different countries which is not the case because in the real world currencies differ in strength.
- Absolute measure ignores some factors like social deprivation, capability and any changes in income distribution (Williams, 1998:7-8).

Despite the above criticisms, absolute poverty is still used in most economies due to its ease of calculation in that those whose income is below subsistence are considered poor.

2.3.2.2 Relative poverty

Relative poverty is defined by SPII (2007:24) as the poverty that exists dependent on some specific reference group. The general living standard of the society is crucial in this definition. According to Slabbert (1997:39) this is a normative idea that relies on a comparison of the standards of living of the poor to those around them. This notion of poverty does not merely focus on the needs for bare survival but brings the question of

inequality into the society. Accordingly, income and wealth redistribution is the key solution to poverty eradication (Walsh, 2008:15).

Relative definitions also emphasise social inclusion, involvement and participation. Poverty then differs between countries and over time since the definition is in terms of a specific society. In a rich country with higher minimum standards, poverty is defined differently from poor countries. The standard rises as the country becomes richer. Relative poverty therefore cannot attain a specific numerical definition (Frye, 2005:3).

Townsend (1979:31) explains relative poverty as a situation where individuals, families and groups in a population lack the resources to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary or at least widely encouraged or approved in the societies to which they belong. Their resources will be seriously below those commanded by the average individual or family around them, causing exclusion from the ordinary living patterns, customs and activities.

According to Noble *et al.* (2004:6) relative poverty involves value judgments and there is no proven fact on the statement passed. This approach to poverty has been criticised based on the following (Beisner, 1995:6):

- Relative poverty, compared to absolute poverty raises a less serious issue especially in the third world, where the focus is on income.
- There is controversy on the thresholds to be used and on what basis.
- Relative poverty explains more on inequality rather than poverty (Beisner, 1995:6).

According to Edwards (2010:28) the inequality criticism is simply confused. Inequality is about differences in income across the whole population while relative poverty is about the number of people who have incomes below those of people in the middle of the income distribution. These two differ in that whilst there will inevitably always be inequality, there is no logical or arithmetic reason why there should always be people in relative poverty.

2.3.2.3 Social exclusion

The social exclusion approach to poverty definition refers to the process whereby individuals become deprived, implying an inability to participate fully in social and economic activities, including those which influence decision making (Paula, 2003:2). This term is used by most governments today when explaining poverty. According to the relative concept of poverty, lack relates to notions of exclusion from participation in mainstream economy where, in a given society, those who are considered poor are usually excluded from full participation (Clert *et al.*, 2001:13). When considering social participation, there exists the concept of relative deprivation. This is when a group of people cannot obtain, at all or adequately, the condition of life which allows them to play their roles, participate in the relationships and to follow the customary behaviour. SPII (2007:11) defines social exclusion as the alienation and disenfranchisement of certain people within a society.

According to Burchardt *et al.* (2002:30) individuals are socially excluded if they are geographically resident in a society but for reasons beyond their control, cannot participate in the normal activities as citizens in that society, though would like to. Individuals excluded have no direct control over the situation. Persons sometimes experience deep exclusion where they face exclusion across more than one dimension of disadvantage with emphasis to multiple and severe disadvantages (Levitas *et al.*, 2007:29). Defining poverty in terms of social exclusion explains the larger notion of poverty. The larger notion is explained by the narrower notion (income approach) and social exclusion where in addition to insufficient income, the poor are denied participation in the society. According to Noble *et al.* (2004:4) if people have inadequate income, not only are they excluded from ordinary living patterns, but it demeans the rest of the society and reduces overall social cohesion in a society through lack of full involvement and deprivation to function.

Duclos and Gregoire (1998:3) purport that poverty may be material in nature but it also carries some emotional effects such as distress and stigma. The poor usually fail to maintain social solidarity which is of extreme value to them. The effects of lack of participation could range from humiliation, loss of honour and psychological distress.

Solidarity enhances the traditional dimensions of poverty where the accessibility of additional resources via social connections enables the poor to meet every day needs. Social exclusion makes such networking and cohesion difficult (Clert *et al.*, 2001:13).

According to Levitas *et al.* (2007:10) some people are at a high risk of social exclusion such that they are omitted entirely from household surveys. These usually includes the population living in institutions of care, disabled people, those in prison and asylum seekers. Homeless people are also missed in household surveys. Other groups are under-represented and this includes some minority ethnic groups, low incomes and residentially mobile populations including travellers (Levitas *et al.*, 2007:10).

Levitas (1998:7) suggests that it is necessary to focus on social exclusion rather than poverty. This argument is founded on that social exclusion is multi-causal, relational, and it includes less tangible aspects than poverty such as the loss of status, power, self-esteem and expectations. Social exclusion can take several dimensions and these were cited as follows by Smith (2000:9):

- Social as evidenced by homelessness, crime etc.
- Political as shown by feelings of disempowerment, lack of political rights and lack of confidence in political processes.
- Neighbourhood where there will be decaying housing stock, environmental degradation etc.
- Individual where a person has some mental and physical ill-health, educational underachievement.
- Group where an individual belongs to a particular groups: elderly, disabled, ethnic minorities etc.

Once socially excluded, it becomes difficult to escape and be accepted as a normal participant in the economy, calling for the need to deal with the cause of the exclusion. According to Heady (2006:10-11) the main barriers identified that hinder moving away from exclusion are:

- Unemployment, resulting in lack of financial capital and income.
- Lack of human capital which is education, job training and work experience.
- Health and disability problems suffered.
- Lack of social and political capital, social networks and organisational memberships.
- Lack of access to services.
- Ethnic, language and discrimination barriers (Heady, 2006:10-11).

Bapat (2009:17) suggests that poverty be viewed in a broader perspective than merely the extent of low-income and low-expenditure in a country. This includes the denial of freedom, dignity, self-esteem, and respect from others. However one of the consequences of introducing social exclusion was the assumption that low income and alienation were essentially unconnected and that each should be considered separately when developing a policy. This led to the tendency in some circles to downgrade the importance of addressing issues of low income (Pantazis *et al.*, 2006:123).

Radermacher (2010:63-76) suggests the following ways of dealing with certain types of exclusion:

- Labour-related exclusion. There should be introduction of programmes of training for those in long-term unemployment.
- Education-related exclusion. Access to primary education and/or affordable childcare can play an important role in employment participation, particularly for those facing other barriers such as low education levels or single parenthood.
- Health-related exclusion. Social exclusion can be triggered by poor health, there should be access to quality healthcare.
- Housing-related exclusion. Housing problems vary from the extreme of homelessness to overcrowding, poor amenities, environmental problems such as noise and pollution, and crime. Access to affordable accommodation of an acceptable quality may be considered as a basic human need (Radermacher, 2010:63-76).

According to Radermacher (2010:63) the perseverance of large numbers of people excluded from work represents a key challenge for the objective of social cohesion. The longer a period of unemployment for an individual, the more deep-rooted that person generally becomes in social exclusion. This may lead to a lack of confidence and a reinforced sense of seclusion.

Social exclusion is a multidimensional concept which includes social, political and economic aspects within a society. It tends to be a feature of groups, rather than individuals. These groups may be distinguished from others in society by their culture, religion, gender or nationality. Social exclusion is relational, in that its definition depends on what is normal in the particular society where people live (Steward, 2004:2).

2.3.2.4 Income approach

This approach defines poverty with a shortfall in monetary income (or consumption) from some poverty line. This money metric approach is commonly used by both the World Bank and the UN. Money-metric methods are objective, easy to measure and can be used as the basis for a range of socio-economic variables (Baker & Schuler, 2004:3). According to the Alcock (1993:60) this income is at US\$1 and US\$2 per day as described in **Section 2.3.2.1**. Income therefore determines the poverty line (Adams & Anastancia, 2008:2).

Income poverty in its simplest sense is usually defined as the inability of an individual or household to attain a minimal standard of living. However, there is a clear split between definitions of poverty which are restricted to income (or consumption) and those which incorporate other non-income factors. According to Maslow's hierarchy of needs, the non-income needs like self-esteem and participation are seen as higher needs, which would become more important as basic needs for food, shelter, housing and safety were met. However, Maxwell (1999:3) notes that many poverty definitions blur the distinction between higher and lower needs.

According to Iceland (2004:2) income poverty and more severe bouts of poverty are strongly associated with food insecurity, difficulty meeting basic needs, and lack of consumer durables. While income poverty had a significant association with the other

well-being measures like housing neighborhood, fear of crime, these associations are not as strong. Its main focus is on income as an indicator of poverty. The main features of the income poverty approach are listed below (Bellu, 2005:2):

- It looks at the position of the individual in the income distribution. Poverty is seen as a part of the total income distribution.
- It requires that the position below which an individual falls in poverty be defined. In some sense, this choice has some degree of arbitrariness for policy purposes, thus should the bottom 10 or 20% of the population be considered.
- It gives rise to the case where poverty will always be with us. Every income distribution has a bottom end of the distribution, unless it is perfectly equal.
- It usually focuses on income as the indicator of poverty. In this sense, it is mostly uni-dimensional (Bellu, 2005:2).

According Maxwell (1999:4) income poverty as the indicator of socio-economic status holds the advantage of its simplicity and standardisation across countries. Despite these advantages, money-metric poverty measures pose the following shortcomings according to Baker and Schuler (2004:4):

- Survey designs vary significantly between countries and over time, making comparability difficult.
- Monetary measures can underestimate urban poverty because they do not make allowance for the extra cost of urban living such as housing, transport, and lack of opportunity to grow one's own food and crowded conditions (Baker & Schuler, 2004:4).

Heady (2006:8) adds that no consensus can be arrived at, even among academics, about which poverty line to use. Oosthuizen (2009:2) points out that the problem with defining poverty in terms of income is that the poor may dissave significantly. Upper income households tend to understate their income and the income measure fails to pick non-remunerative activities of the households, such as subsistence farming. In turn, the expenditure as a measure of welfare is very difficult to collect in survey data,

and is often very costly. Another problem with the application of a monetary approach is equating one homogeneous category, which is not only artificial but possibly even misleading. The fact that a household is non-poor in terms of income provides no guarantee of adequacy in other important aspects of wellbeing (Montgomery, 2009:3). Nevertheless, adopting the common denominator of a measurement based on monetary indicators is useful for comparative purposes (Laderchi, 2000:4).

2.3.2.5 Capability approach

According to McKinley (2006:1) the capability approach to poverty definition was the first multidimensional index of poverty. Unlike income, capabilities reflect not only income, but human outcomes like the quality of people's lives. This definition considers resources required to enable anybody to do whatever thing. Poverty is thus a state of being deprived of these capabilities and failure of some capabilities to function (Kingdon & Knight, 2003:5).

Sen (1983:41) defines the capability approach as failure to achieve certain minimal or basic capabilities, where these basic capabilities include the minimally adequate level necessary for survival. In this approach, wellbeing is seen as the freedom of individuals to lead lives that results in the realisation of human potential. Focus is put on factors such as obstacles or personal circumstances that can limit the capabilities of individuals to participate fully in a society (Cemafi, 2003:7).

Sen (1983:41) was the first person to attempt defining poverty in terms of capabilities and never offered a definitive list of key capabilities or functioning. Neither did he offer definitive advice on how to weight them. This is partly because of the recognition that the list is bound to differ for different times, persons and places. Alkire (1998:2) argues that the lack of specification was deliberate in order to allow room for choice across societies and ensure the relevance of the approach to different persons and cultures. According to Heady (2006:10) however, three domains of capability and functioning would be on everyone's high priority list and these are adequate education, adequate material standard of living and reasonable health. These are included in the UN's Human Development Index, which was constructed with Sen's ideas in mind. Evaluating

the capability approach into an operational framework requires a more detailed definition of basic capabilities and of the levels of achievement which are to be considered essential (Laderchi *et al.*, 2003b:18).

Sen (1990: 114) distinguishes between functioning and capability. Functioning refer to what a person actually manages to do or be. They can include sophisticated levels such as participation in the life of the community and the achievement of self-respect. Capabilities denote what a person can do or be, that is, the range of open choices. Critical to this is the freedom people enjoy in choosing between different ways of living. There has been an attempt to list the features of capabilities. Nussbaum (2000:74) has attempted to provide a list of basic capabilities and argues that these can vary with society:

- Normal length of life including good health, adequate nutrition and shelter.
- Bodily integrity: movement and choice in reproduction.
- Senses, imagination and thought informed by education.
- Practical reasoning resulting in critical reflection and planning life.
- Affiliation, social interaction and protection against discrimination.
- Respect for and living with other species.
- Control over one's environment, choice and material assets (Nussbaum, 2000:74).

Heady (2005:9) had a central belief that, in order to function effectively in a modern country; people require a fairly wide range of capabilities, and not just an adequate income. In this view to be poor is to lack independence, to have impoverished choice in the context of the society in which one lives. Accordingly, it has to be objectively true that lack of certain capabilities leads to an impoverished range of choices. The capabilities required may differ between rich and poor countries, and they may be hard to measure.

One of the advantages of the capability approach is that it draws attention to a much wider range of causes of poverty than the monetary approach. There is emphasis on

the kind of life individuals live rather than on the private resources (income) to which they have access. The approach also addresses the neglect of social goods in the monetary approach (Laderchi *et al.*, 2003a:18).

According to Beckley and Saubanov (2009:9-10) the most difficult tasks in applying the capability approach to poverty is deciding which capabilities are most important. The ranges of human capabilities are infinite and the value that individuals assign to each one can vary from person to person. Thus, one has to exercise value judgement in choosing the appropriate functioning to compare.

2.3.2.6 Human scale development approach

The Human-Scale Development (HSD) approach was developed by Manfred Max-Neef and colleagues in the 1980s and was further formally defined in the first human development report as a process of enlarging people's choices. The human development report now uses four key indicators to access human development which are outlined below according to UN (2009:2):

- Human Development Index (HDI): This measures the average achievements of people in three dimensions of life expectancy, adult literacy rate and the Gross Domestic Product (GDP) per capita.
- Gender-related Development Index (GDI): This relates to inequalities between men and women.
- Gender Empowerment Measure (GEM): This measure indicates the opportunities open to women in the dimensions of politics, decision-making, economics and power (UN, 2009:2).

Whereas income poverty is based on only one indicator, human poverty encompasses multiplicity of dimensions associated with poverty. It includes deprivation on a material level. Social deprivation such as denial of employment, participation in social institutions, and education are also included in the definition of deprivation (Dannefer & Phillipson, 2010:133). The human scale development approach can be divided into humanist economics and human scale economics.

2.3.2.6.1 Humanist economics

This is centred on the issue of human welfare. According to Stahel and Barreiro (2006:59) this is a normative approach oriented with a prior ethical assumption of human equity. Humanist economists focus on human dignity as being capable of solving pertinent problems affecting humanity such as poverty. There is a difficulty in clearly defining some human capabilities. The issue being, whether the command over material resources and income participate in human capability? This is a troubling ambiguity that underlies major recent problems (Mckinley, 2006:1). The UN's Economic and Social Council has described human poverty as a denial of choices, opportunities and a violation of human dignity (UN, 1998) cited by Gordon (2005:3). This incorporates lack of basic capacity to participate effectively in society, insecurity, powerlessness and exclusion of individuals, households and communities. It means susceptibility to violence, and it often implies living on marginal or fragile environments, without access to clean water or sanitation. The central thought is that the best development process should enable improvement in people's quality of life and allow countries and cultures to be able to be self-coherent, yet the challenge is to internalise an approach based on human needs (Max-Neef, 1989:18).

2.3.2.6.2 Human scale economics

In this case the best development process will be one that raises people's quality of life. This depends directly on the possibilities available to that person to satisfy his/her fundamental basic needs (Max-Neef, 1992:40). The human scale is developed by the satisfaction of fundamental human needs and the generation of growing levels of self-reliance (Max-Neef, 1992:197) cited by Stahel and Barreiro (2006:61). Every system of needs is either satisfied, or not, by generating different types of satisfiers. Any unsatisfied, or not adequately satisfied human need, reveals a form of human poverty. The human scale approach suggests poverties not poverty; where one can affirm that every culture or society could be rich in certain areas of life, and poor in others, depending on different circumstances (Stahel & Barreiro, 2006:62-63).

Sustainable human development implies equal access to development opportunities for present and future generations. This is a type of development where each generation must meet its needs without incurring debts it cannot later repay. UNDP (1999:5) includes the global issues like human rights, collective well-being and equity in the definition of human development. Sustainable human development becomes a process of constant improvement in social, natural, political, economic and moral systems (Stahel & Barreino, 2006:30). According to the UNDP (1996:55-56) human development dimensions are specified as follows:

- Empowerment - this is the expansion of people's capacities.
- Capabilities - expansion that involves an enlargement of choices and thus an increase in freedom.
- Cooperation - people live within social structures. This sense of belonging is an important source of well-being.
- Equity - this implies wealth or income. In this view everyone should have the opportunity to be educated to lead a long and wealthy life.
- Sustainability - it involves considerations of intergenerational equity. What need to be sustained are people's opportunities to freely exercise their basic capabilities.
- Security - unemployment is a major source of insecurity, undercutting people's entitlement to income and other benefits (UNDP, 1996:55-56).

The above differing means of defining poverty shed light to the many existing definitions of poverty. Debate on defining poverty is worth pursuing because of the considerable costs of poverty to those who have to endure it and its impact on the rest of society. However, finding a consensus single definition is far from being reached if not impossible. The same debate underlines the measure of poverty where there exists several means with each yielding different results (Duclos & Gregoire, 1998:3).

2.4 MEASURING POVERTY

Poverty measure is another area of contention just like poverty definition. According to Laderchi *et al.* (2003a:15) measurements of poverty depend on the purpose for which

poverty is measured as well as the availability of data. Despite emerging literature on the multidimensional nature of poverty and the need to expand conventional sets of indicators, measurements of poverty tend to be biased toward traditional economic indicators (Laderchi *et al.*, 2003a:15). However certain requirements have to be met when measuring poverty.

2.4.1 Requirements for poverty measurement

The measure of poverty is evaluated by the characteristics (axioms) it satisfies. A number of these axiomatic analyses of poverty indices were first introduced by Sen (1976:81) and are still viewed as key in poverty measurement. Over the years, authors have refined several axioms, making them more relevant to present poverty measurements. Accordingly, a good poverty measure should possess several desirable characteristics of which some are discussed below.

2.4.1.1 Focal axiom

According to this axiom, a poverty measure should disregard information relating to the income of the non-poor, thus be independent of the income distribution of the non-poor. The applicability of this axiom rests upon the poverty definition. If poverty is defined in absolute terms, the focal axiom will be appropriate compared to when other definitions are used because it is easy to demarcate the poor from the non-poor (Zheng, 1997:130).

2.4.1.2 Monotonicity axiom

This explains that the poverty index should increase (fall) when the income of a poor person diminishes (increases). Accordingly, there should be a correlation between the index and the distance of the poor to the poverty line. This axiom has two forms, the weak monotonicity and the strong monotonicity. The weak monotonicity explains that a reduction in a poor person's income, holding other incomes constant, must increase the value of the poverty while the strong axiom suggests that an increase in poor person's income, holding the other poor person's incomes constant, necessarily reduce poverty (Zheng, 1997:131). Subgroup monotonicity explains that if a given population subgroup's poverty measure increases, and everything else remains constant, then the

poverty measure for the whole population should increase and vice versa (Expect Group in Poverty Statistics, 2006:95).

2.4.1.3 Transfer axiom

A transfer of income from a poor person to a less poor person should increase the poverty index. This axiom believes that poverty measure should reflect how incomes are distributed among the poor; therefore a pure transfer of income from a person below the poverty line to anyone who is richer must increase the poverty index (Sen, 1976:219). According to Bellue (2005:2-3) there is the weak transfer axiom which requires that a poverty measure should be sensitive to the distribution of incomes among the poor. Other things being equal, poverty must increase if the distribution of income among the poor worsens. Strong upward transfer axiom indicates that the poverty index should decrease (increase) after a progression (regression) transfer when the poorest of the two individuals is poor both before and after the transfer and the richer of the two individuals may be either poor or non-poor as a result of the transfer (Bellue *et al.*, 2005:3).

2.4.1.4 Symmetry axiom

This axiom depends on the income levels of anonymous persons and believes that the incomes of these recipients do not matter when measuring the intensity of poverty. Symmetry axiom does not impose any real restriction as any aggregate image measure cannot avoid symmetry. This axiom enables one to use an ordered income distribution (Zheng, 1997:131).

2.4.1.5 Continuity axiom

Poverty measure must vary continuously with incomes. Thus given a very small change in a poor person's income, one should not expect a huge jump in the poverty line. Watts (1968:325) cited in Zheng (1997:130) may have been the first to discuss this axiom. Watts argued that "poverty is not really a discrete condition and one does not immediately acquire or shed the afflictions associated with the notion of poverty by crossing any particular income line".

2.4.1.6 Decomposability axiom

The poverty index should be a weighted average of the poverty indices, applied to specific subgroups, within the population. The weights should equal to the population share (De Walt, 2004:10). This requires overall poverty to be related consistently to constituent parts the population sub-groups. For example if poverty is seen to rise amongst each sub-group of the population then we would expect poverty overall to also increase (Litchfield, 1999:2). Decomposability therefore requires overall poverty to be the weighted average of subgroup poverty levels, where the weights are the population shares of the respective subgroups. This property has been used extensively in the empirical literature (Alkire & Foster, 2007:5).

2.4.1.7 Replication invariance axiom

Replication invariance axiom explains that the value of a poverty measure does not change if it is computed based on an income distribution that is generated by the replication (reproduction) of an original income distribution. This axiom requires that a replication of dimensional deprivations across people should leave multidimensional poverty unchanged. In particular, it ensures that multidimensional poverty does not arise because there are more people in one society than another; rather, multidimensional poverty is measured in per capita terms, independent of the population size (Alkire & Foster, 2007:13). For some observers, these axioms or principles are pre-conditions to judge the rationality of a poverty measure. Some axioms impose stronger conditions than others (Osberg & Xu, 2007:10). The section below study different means of measuring poverty.

2.4.2 Means of measuring poverty

According to the World Bank (2001:11) poverty has many dimensions and as such is difficult to measure. In most cases, an approach to the measurement of living standards, poverty and development confronts the problem of the lack of a unique measurement yardstick. Bibi (2003:1) agrees to the debate on poverty measurement and proposes that many theoretical and methodological issues should be addressed before a measure is done. These include issues such as the individual welfare

indicators and how the set of information describing the poor population can be processed into a poverty measure. Economic literature emphasises that it is often hard, if not impossible, to find a consensus on poverty index due to the subjective nature of poverty.

The issue of whether poverty is subjective or objective was further elaborated on by Laderchi *et al.* (2003a:4-5). It was noted that most statements about poverty entail objectivity, implying a certain reality which poverty statistics capture. At the same time, value judgements affect measurement then the methods become subjective. The question resulting from this is to establish who is making the value judgements; are they made implicitly by the researchers or statisticians who are measuring poverty?

Despite all the above arguments, poverty has to be measured. The World Bank (2005:8) gives the following reasons for measuring poverty:

- To keep the poor on the agenda; if poverty was not measured, it would be easy to forget the poor.
- The need exists to identify the poor in order to target interventions that aim to reduce or alleviate poverty.
- To monitor and evaluate projects and policy interventions geared towards the poor.
- To evaluate the effectiveness of institutions helping the poor (World Bank, 2005:8).

According to Clert *et al.* (2001:1) measurements of poverty can be both qualitatively and quantitatively. Qualitative measures of poverty view the experiences of those actually suffering from poverty. These methods use observation or surveys to shed light on the economic, socio-cultural and political context of the poor. On the other hand, a quantitative approach makes use of the collected data and does not consider the experiences and the feelings of the poor. It therefore cannot fully capture causality because of the failure to provide appropriate information. In project evaluations, the combination of quantitative and qualitative research techniques is especially important (World Bank, 2001:2).

Poverty is measured differently by various associations and organisations. The World Bank concentrates on income measures of poverty while the UNDP has a wider view of poverty as multi-dimensional and therefore covers a broader picture. According to Allen and Thomas (2000:16) the World Bank puts emphasis on labour intensive economic activities whereas the UNDP gives prominence to developmental issues in social services like education. This causes the policy implications of these two institutions to differ. Nevertheless, the fundamental requirement for an adequate poverty measure is a prior understanding of the objective of the measures and the way the policy would be formulated to address the problem of poverty (Kamanou, 2005:2).

The lack of official measures has sometimes led to confusion in the development of differences and contestations around actual levels of poverty. The impact of definitional vagueness has been and remains considerable, affecting the measurement means and development programmes, thus fuelling the solid debate on poverty (SPII, 2007:6). The understanding of the different approaches to the measurement of poverty requires an examination of historical developments and circumstances. Some of these approaches are discussed below.

2.4.2.1 Poverty lines

Poverty lines identify the amount of money needed to acquire goods and services to satisfy basic needs (Expert Group on Poverty Statistics, 2006:22). According to Sen (1976:219) cited in Worland and Leibbraint (1999:9) this is the income approach. The line divides the population into two groups on the basis of meeting basic needs. Below the line a household or individual is considered to be poor, and a household or individual above the line is considered non-poor. Poverty lines are a useful and easy means for describing poverty. By defining a line that is regarded as a minimum living level, number of poor people is obtained (Worland & Leibbraint, 1999:8). The cost of basic needs that is used to estimate the poverty line is the cost of acquiring enough food for adequate nutrition – usually 2 100 calories per person per day, then adds on the cost of other essentials like clothing and shelter. When price information is lacking, the food energy intake method is used, which measures expenditure (or income) per capita against food consumption in calories per person per day.

Food Poverty Lines (FPL) are constructed on the basis of nutritional requirements. In constructing FPL, there are two general approaches, namely normative and semi-normative (Expert Group on Poverty Statistics, 2006:54-55). Normative FPL estimates the cost of a basket of food where the basket is made to fulfill established nutritional and health criteria. Semi-normative food poverty lines, on the other hand, constitute the cost of a food basket that is anchored to certain nutritional guidelines according to the consumption habits and market prices faced by the population (Expert Group on Poverty Statistics, 2006:55). Semi-normative poverty lines take account of consumer preferences and habits in terms of the types and quantities of food consumed. Of the two types of food poverty lines, it is apparent that semi-normative food poverty lines are far more common than normative food poverty lines.

There are three basic approaches to estimate poverty lines, namely absolute, relative and a subjective approach. Each approach views poverty, its experience and quantification differently.

2.4.2.1.1 Absolute poverty lines

According to Oosthuizen (2009:2) the absolute approach to poverty measurement constructs a line that values the goods and services required to meet a set of absolute minimum living standards in monetary terms. The absolute poverty line is fixed in real terms even if there are rising living standards, changes to monetary value being only to take account of inflation (Worland & Leibbrandt, 1999:9). World Bank (2010:6) defines this poverty line as the money an individual needs to achieve the minimum level of welfare not to be deemed poor. For most economists the concept of welfare that should anchor the poverty line is the utility function defined in terms of own consumption.

In defining absolute poverty line, there is a need to identify the characteristics of a full or decent life, and set deprivation in relation to this. The idea of a dividing line between the poor and non-poor represents a binary approach to poverty, which conceals a lot of information on variables such as money income and some capabilities (Laderchi, 2000:6). In developing countries where food expenditure makes up a large part of the basic needs bundle, a poverty line based on the amount of money needed to buy

enough food to obtain the minimum intake of kilojoules and a modest allowance for non-food goods is often advocated for (Ravallion, 2010:8).

Absolute poverty lines have become a widespread gauging method for inadequacy of resources. The application has increasingly moved away from the idea of subsistence, giving more room to needs that are socially determined (Expect Group in Poverty Statistics, 2006:22). According to Greer and Thorbecke (2001:4) cited by Ikejejeu (2009:4) the fixed quality of an absolute poverty line is useful in informing policy since it provides a stipulated target for poverty interventions. Policy-makers can assess the impact of current or proposed social assistance programmes by using an absolute poverty datum line to measure changes in the poverty rate. Whether a household or individual consumes enough, basic needs may arguably be a more accurate and intuitive measure of impoverishment than income distribution (Ikejejeu, 2009:4).

The absolute international poverty measure was originally set at \$1 per day per person, and subsequently updated to \$1.08 per day using 1993 international prices (UNDP 2004; Laderchi *et al.*, 2003a:5; Deaton, 2003:4). It was revised by the World Bank (2005) to \$1.25 per person per day measured in 2005 prices. The revision was done because the earlier poverty lines were based on smaller and outdated set of basket (World Bank, 2008:7). Rich nations generally employ generous standards of living than poor nations and in practice; the official poverty line is significantly higher, set at US\$2 per day per person in developed countries (Bhorat *et al.*, 2003:4).

Evidence suggests that poverty lines underestimate the actual extent of poverty. Reddy (2009:2) notes the possibility that some recent poverty lines might have been expediently put at the \$1/day mark. In the new round, the World Bank poverty line of \$1.25 per person per day has been based on the average poverty line for the poorest 15 countries. Furthermore, the World Bank poverty line has been adjusted to \$1.45 per day using the 2005 prices after considering the United States rate of inflation during the global economic downturn which started in 2007 (UNDP, 2011:6).

2.4.2.1.2 Relative poverty lines

Relative poverty lines take into account a given society's characteristics and attempts to identify those individuals whose standards of living are unacceptably low relative to the rest of society. This poverty line is defined by the mean or median income or expenditure in the society (Oosthuizen, 2009:2). In terms of the relative poverty line, poverty cannot be measured independently of the general level of welfare and standard of living in a given society. This implies a shift from a pure money-metric approach to poverty towards the initiative that poverty represents the failure to participate in the ordinary life of the society owing to a lack of resources (Expert Group on Poverty Statistics, 2006:73). Relative poverty lines are widely used in developed countries. According to Oosthuizen (2009:7) developing countries focus mostly on basic living standards.

Oosthuizen (2009:7) identifies two broad ways in which to define relative poverty lines. The first merely defines the poor as a given proportion of the population at the lower end of the income or expenditure distribution. The second method defines a poverty line relative to the relevant society's standard of living, proxied by income or expenditure. Poverty lines are set at a specific percentage, mean or median income. This relative definition of poverty implies that, even though the poverty line may shift upwards as overall income levels increase, it is still possible to eliminate poverty through distributional changes. According to Laderchi *et al.* (2003a:10) relative poverty lines can be determined by political consensus. In some developed countries, a realistic way of determining the poverty line defines the deprived as those who receive support from public sources in the form of social security. There is however a challenge with such a measurement since some individuals suffering from poverty and exclusion are even excluded from security nets.

Relative measures of poverty can be objective or subjective. Objective lines refer to a situation where peoples' income falls in comparison to other people in the country while subjective lines refer to how people see themselves relative to others in terms of poverty and social exclusion (Frye, 2005:10). Calculations based on relative poverty line are less likely to be controversial, as it makes use of recent data. The national lines rise

with the rise in mean income and consumption, though the relationship is clearly quite flat at low per capita consumption levels (World Bank, 2010:5).

A relative poverty line can be defined as that income level that cuts off the specified poorest percentage of the population. An example will be the World Bank which generally defines the poor as the bottom 40% of households, and destitute as the bottom 20% of the income distribution (Aksoy & Dikmelik, 2008:7). When the poverty line is represented by the average mean income in the society, a relative poverty line is dependent on the distribution of income of the population (Expert Group in Poverty statistics, 2006:36). The choice of this percentage has always been arbitrary, but 40 or 50% is often chosen. This method however suggests that poverty will always be a certain percentage and that the poor are always with us. Even in the event of a massive shift in living standards, the proportion of people in poverty remains unchanged, only the poverty line shifts upwards as the general standard of living rises (Worland & Leibbrandt, 1999:10).

Relative poverty lines differ from absolute poverty lines in that with the latter, any two people with the same purchasing power over commodities, but living in different countries are treated the same way, either poor or not poor. However, relative poverty measures only treat them the same way if the two countries have the same mean income (Chen & Ravallion, 2009:5). Since relative lines are society-specific, comparisons across countries can say nothing about absolute living standards across different countries, but rather give a somewhat muddled picture of inequality of income distribution across countries. This confusion is due to differences in the relative lines chosen (Laderchi *et al.*, 2003b:5-6). A relative poverty line will move with living standards as represented by median income (Worland & Leibbrandt, 1999:9).

The question of whether poverty should be seen as a state of absolute or relative deprivation has dominated the literature on the construction of a poverty line (Ravallion, 1995:24). Economic growth generally results in a reduction in the number of people in absolute poverty, but only a change in the distribution of income will reduce the number of people in relative poverty. This distinction is important because it affects the way

poverty is perceived and the reduction policies. In conclusion, absolute poverty lines have dominated the practice of poverty measurement in developing countries, relative poverty lines are considered more relevant in several developed nations.

2.4.2.1.3 Subjective poverty lines

According to Frye (2005:5) subjective poverty lines are based on asking people the minimum income level needed in order to just make ends meet. Poverty threshold is determined on the basis of people's perception of their own wellbeing. This is a participatory poverty assessment which questions the poor on how they would define poverty, minimum income or expenditure required by a household. As such it has both an absolute and a relative aspect in that it includes both own needs, and how they view their needs against the image of the community in which they live (Frye, 2005:5).

When using the subjective poverty line, the critical level between poor and non-poor is determined by the poor. As yet this approach has not been used officially in any country or by any international institution as the core methodology for the measurement of poverty; it has instead been employed mostly as a complementary procedure (Expect Group in Poverty Statistics, 2006:80). The subjective approach can be used either in monetary terms to determine the value of a poverty line or non-monetary contexts such as the unmet basic needs or deprivation indicators methods. The issue of subjective poverty explains the larger picture in analysing wellbeing. The best-known method for measuring subjective poverty was initially proposed in Goedhart *et al.* (1977) cited by the Expect Group in Poverty Statistics (2006:80) and later applied in different contexts. This method uses the minimum income question which is used together with the welfare function of income. In particular, the welfare function is used to test whether the personal function of income varies systematically with income and family size (Expect Group in Poverty Statistics, 2006:82).

Pradhan and Ravallion (1998:3) emphasise some drawbacks of the minimum income question approach and propose an alternative method based on a consumption adequacy question. Among the limitations of the income question, the authors noted that households have different concepts of income, which may differ with each other or

with the concept of income expected by the question. Some households may consider only their monetary income, while others may include other sources of income like gifts and donations. In addition, the notion of a minimum income may be interpreted differently across households; some may think mainly of food needs, while others may also consider a large proportion of non-food needs. The minimum income question method assumes that the respondents have a good notion of their current total income (Expect Group in Poverty Statistics, 2006:83).

To avoid these limitations, Pradhan and Ravallion (1998:4) propose using only qualitative questions where households are asked whether the standard of living of the family is less than adequate, adequate or more than adequate for the family's needs. Another crucial aspect is the difficulty of obtaining accurate answers from respondents. The following however are the advantages of the subjective poverty line according to Expect Group in Poverty Statistics (2006:83):

- It generates valuable information about what the population thinks about their own well-being, providing a reality check for the results obtained from other approaches.
- It plays a significant role when multiple dimensions are to be considered in the study of welfare.
- It is free from arbitrariness, since the definition of the poverty line is derived from the population itself and not by the researcher (Expect Group in Poverty Statistics, 2006:83).

The subjective poverty approach differs from the previous two since it uses people's perception of what constitutes the minimum necessary for a household as the best standard of comparison for actual incomes or expenditures.

2.4.2.2 Head-count index

Deaton (1994:122) defines head-count index as the expression of the number of the poor as a proportion of the whole population. This is the simplest method of measuring poverty as it expresses the fraction of the population below the poverty line. The head-count index therefore determines the number of households that fall below the poverty

line. The index is calculated using the following formula (Borooah & McGregor, 1991:357):

$$\text{Headcount index} = H(y: z) = M/N \dots\dots\dots 2.1$$

Where:

y = the distribution of income

z = the poverty line

N = the whole population

M = households with income equal to or less than the poverty line.

Tilakaratna and Satharasinghe (2002:3) note that this method is widely used because of its simplicity in application, interpretation and administration. There are, however criticisms to this method:

- The index assumes that the poor are in the same situation. It therefore ignores the fact that the degree of poverty differs (World Bank, 2005:6).
- It violates the welfare principle of Dalton (1920) which states that transfers from the rich to the poor person should improve the measure of welfare.
- It does not change if individuals below the poverty line become richer or poorer (Reyes, 2005:8).

The head-count index satisfies the focal axiom which explains that the poverty measure should be independent of the income distribution of the non-poor. It however provides a very limited view of poverty since it offers no information on the depth of poverty (monotonicity axiom) and does not consider distributional aspects of the poor population (transfer axiom). That is why beside the head-count ratio other indexes of poverty are needed (Expect Group for Poverty Statistics, 2006:96; Cemafi, 2003:10-11).

2.4.2.3 Poverty gap index

The poverty gap index measures the aggregate shortfall of the income of the poor from the poverty line, i.e. the total income necessary to lift the poor to the poverty line. The gap is often expressed as a percentage or ratio of the poverty line as follows according to De Walt (2004:9):

$$\frac{1}{N} \sum_{i=1}^q \frac{(Z_i - Y_i)}{Z_i} \dots\dots\dots 2.2$$

Where:

Y = income of poor household,

Z =poverty line,

N = total number of population,

q = number of the poor.

According to Ravallion (1992:32) the poverty gap can also be written as: $PG = I \times H$, where H is the number of poor households and I is often referred to as the income gap ratio (mean depth of poverty as a proportion of the poverty line), and is defined by the following equation:

$$I = \frac{Z - Y^p}{Z} \dots\dots\dots 2.3$$

Where:

y^p = the mean consumption of the poor.

Z = the mean income of the poor.

The poverty gap index indicates the average distance between the income of those in poverty and the poverty line. It is not a good indicator of poverty on its own because if the richest person among the poor raises his or her income above the poverty line, the

indicator will show an increase in poverty because the new mean income of the poor will be lower, even though the number of poor has diminished. This shortcoming is solved when the income gap ratio is multiplied by the head-count index (Expect Group in Poverty Statistics, 2006:96). The index is simply the average poverty gap across the entire population. Summing all the poverty gaps in the sample population and taking the average provides an approximation of what would be the minimum cost of eliminating poverty in society. According to the World Bank (2008:3) the weaknesses of the poverty gap index are as follows:

- The poverty gap index is insensitive to transfers among the poor.
- It is more difficult to interpret and is less intuitive than the other poverty measures (World Bank, 2008:3).

The poverty gap index satisfies the focal and monotonicity axioms but it does not comply with the transfer axiom (Expect Group in Poverty Statistics, 2006:90).

2.4.2.4 Dependency ratio

Dependency ratio is the fraction of non-income earners that depend on the income earner. In developing nations where the birth rate is reportedly higher than in developed nations, the dependency ratio is high and this is the other cause of poverty in these nations (Cheema, 2005:17). Poverty in a household will increase with the increase in the dependency ratio. As more people compete for the income of the working person in the household, less is being consumed by each member. Dependency ratio is calculated by the formula:

$$NE/E \dots\dots\dots 2.4$$

Where:

NE = Total number of non-earner

E = Total of earners.

This indicates the burden carried by income earners of households. Poverty results if a large number of people depend on the small income of an individual in a household (Wöss & Türk, 2011:4).

2.4.2.5 Sen index

Sen's index consists of a combination of the proportion of a population who are poor (given by the head-count measure), the depth of poverty (represented by the poverty gap index) and the level of inequality among the poor (reflected in the Gini-coefficient). This approach is open to variation and, as such, many alternative axiomatic indexes of poverty have been proposed (Sen, 1976:219). The Sen index is calculated by the formula:

$$S = H [1 + (1 - I)] Gp \dots\dots\dots 2.5$$

Where:

H = Head-count index

I = Income

Gp = Gini-coefficient for income distribution of the poor. When income distribution of the poor are all equal, thus $Gp = 0$. Sen's index measure becomes $S=H$ (Sharrocks, 1995:1226).

Xu and Osberg (2002:2-3) point out that the Sen indices are based on a set of well justified and commonly agreed axioms since Sen developed an index aimed to measure the intensity of poverty. However, Sen indices presents two disadvantages. The first is that the sum of the contributions of each population subgroup to total poverty may not add up to 100%. The second is that total poverty may diminish even when the poverty in each sub-group increases. There are also other poverty measures based on income inequality indices, which attempted to modify the Sen index such as the Foster-Greer-Thorbecke method (1984) and the Sen-Shorrocks-Thon index (1995) (De Walt, 2004:9) which are discussed below.

2.4.2.6 Sen-Shorrocks-Thon index

The Sen-Shorrocks-Thon (SST) index is sometimes called the modified Sen index of poverty intensity. This index is a follow-up of the work of Sen (1976), Thon (1979) and Shorrocks (1995). The resulting index is therefore consistent with the limit of another index proposed by Sen (1976) and Thon (1979). The SST index measures poverty incidence, depth, and inequality jointly and is a comprehensive poverty measure. In addition, this index can be decomposed into its constituting parts transparently (Xu, 2011:1).

The SST index is calculated as:

$$\text{SST} = (\text{poverty rate}) \times (\text{average poverty gap}) \times (1 + \text{Gini-coefficient of poverty gaps for the population}) \dots\dots\dots 2.6$$

In the formula, the poverty rate (or the head-count) represents a proportion of the population whose incomes are below a predetermined poverty line. This is multiplied by the poverty gap and the 1+ the gini-coefficient. Poverty gap measures the average income shortfalls below the poverty line. In the population, the higher the average poverty gap, the deeper the poverty. The Gini-coefficient of poverty gaps for the population measures poverty inequality in a society. The higher the Gini-coefficient, the higher the inequality in the society. Adding 1 to this Gini-coefficient does not change the nature of, the information provided (Xu, 2011:2).

The SST index and the Sen index are closely related but the SST index has more desirable properties. The Sen index does not satisfy the strong upward transfer and continuity axioms but the SST index does. The strong upward transfer axiom says that a regressive transfer from a poor person to a rich person must always cause a poverty measure to fall if, in the process, the beneficiary crosses the poverty line. The continuity axiom says that a poverty measure must vary continuously with incomes. This axiom ensures that a poverty measure is well behaved function of incomes (Xu, 2011:3). The Sen index differs from the SST index because it uses the Gini-coefficient for poverty gaps for the poor whereas the SST index uses the Gini-coefficient for the whole population.

2.4.2.7 Foster-Greer and Thorbecke index (FGT)

Following Sen's (1976) poverty measure framework, many authors claimed that rational aggregation measures should minimally include both the depth of poverty and income inequality among the poor, in addition to the head-count. Various indexes satisfying these criteria exist, developed in response to Sen's work and among them are the family of measures introduced by Foster, Greer and Thorbecke (FGT) (1984). FGT index measures the severity of poverty which is additive, whereby the poverty gaps of the poor are weighted by those poverty gaps in assessing aggregate poverty (Ravallion, 1992:38-39).

FGT (1984:763) proposed the following parametric family of poverty measures:

$$P_{\alpha}(y, z) = \frac{1}{n} \sum_{i=1}^q \left[\frac{z - y_i}{z} \right]^{\alpha} \dots\dots\dots 2.7$$

Where:

y = income distribution

y_i = income of individual i

n = sampled population

z = mean income of the poor

$\alpha \geq 0$ can be interpreted as an inequality aversion parameter, which assigns varying weights to the difference between the income of each poor individual and the poverty line. When $\alpha = 1$, it equals the poverty gap index. As α increase beyond the value of 2, more weight is progressively given to incomes that are far from the poverty line. In fact, as $\alpha \rightarrow \infty$, the poverty measure will depend entirely on the distance of the poorest person's income to the poverty line.

A measure that has been used extensively in the measurement of poverty is P_{α} with $\alpha = 2$ (or FGT2), as it satisfies the transfer axiom as well as the focal and monotonicity

axioms. Every index of the FGT family is also additively decomposable. However FGT (1984:242) in their survey concluded that no one index of poverty was clearly superior to all others and that the choice of a poverty measure involves a certain degree of arbitrariness.

2.4.2.8 Watts index

Harold Watts (1968) proposed an alternative measure to poverty that is distributional sensitive and calculated using the weighted sum of poverty measures of population sub-groups. This alternative measure to poverty named the Watts index, takes a very different form from those discussed in the previous sections. It weighs increases from very low incomes heavily and stays flatter for less poor individuals. The original Watts measure is defined as follows according to Morduch (1998:385):

$$1/N \sum_{i=1}^q [\ln(z) - \ln(y_i)]$$

.....2.8

Where:

There are i individuals in the population indexed from 1 to N in ascending order of income and q is the number of people with income y below the poverty line z (Morduch, 1998:385).

The way that the logarithm is used indicates that the Watts index is more sensitive to changes in the lowest incomes than it is to changes in the higher incomes. That is, transferring money to a very poor person counts as a far larger contribution to poverty reduction than transferring the same amount to a richer (but still poor) neighbour. Allocating anti-poverty resources to minimise the Watts index would thus incline efforts toward the poorest, which is a feature that many analysts find appealing. The Watts index also satisfies the transfer-sensitivity axiom (UN, 2005:65).

Of the measures described above, the one that satisfies all of the desirable axioms, the Watts measure, turns out to be the least used. This suggests an ongoing tension

between the desire for simplicity and transparency pitched against the desire for truthfulness (UN, 2005:57).

2.5 CAUSES OF POVERTY

The causes of poverty are broad and diverse, differing with the economy, geographical areas and individuals. One method of investigating the causes of poverty is to examine the challenges faced by the poor, which include feelings of voicelessness and powerlessness in the institutions of the state and society (World Bank, 1990:34). The following are some of the situations that can lead to the emergence of poverty.

2.5.1 Economic growth

Low economic growth is a precondition that causes poverty. The quality of growth is important since not all growth is pro-poor. A study by Grimm and Gottingen (2005:15) demonstrates that the poverty head-count declines when the growth rate of average family income is higher than the rate of inflation. The flipside is also true that there is an increase in the poverty head-count when inflation is more than growth in family income, irrespective of the overall economic growth. The best measuring yardstick is the GNP per Capita which measures the national income per individual. A rise in the GNP which is less than the rise in population of citizens causes poverty because the consumption per individual is falling. This slowdown in output growth gives rise to the labour market shock, where unemployment rates increase (Katz, 2010:4). Moreover, there is a need to restrain inflation through prudent macro management.

High per capita consumption matters since it reduces poverty. Greater investment in education and health brings economic growth and poverty-reduction. Social policies create social opportunities for the poor and political institutions create transparency and accountability, which, in turn, impacts positively on economic growth. Hence, there is a need to strive for more effective decentralisation that empowers ordinary people (Nayyar, 2005:1638).

2.5.2 Inflation

Inflation is an increase in the general price level of all goods in the economy. With the increase in the general price level, poverty head-count increases. Food prices often increase faster than the general level of prices. Datt and Hoogeveen (2003:3)'s analysis found that the impact of the Asian financial crisis on poverty was harsh in the crisis-affected countries. The effect of inflation on poverty is quite substantial. According to (Sugemal *et al.*, 2010:1) not only the head-count index rises because of inflation, the poverty gap may significantly worsen, even in times when the head-count index is improving. Cardoso (1992:3) notes that inflation increases poverty in two ways. Firstly, inflation reduces disposable income, causing the consumers to afford less goods and services. Secondly, if nominal wages increase less than the price of goods consumed by wage earners, workers' real income declines.

2.5.3 Household composition factors

Household composition factors include number of children, teen parenthood, marital status, divorce and single parent families among others. These are highly correlated with income and poverty (Rynell, 2008:12). Women who have had teenage non-marital births face economic challenges. A study by Hoffman and Foster (1997:1) documented that 55% of them were officially poor. Teen parenthood is associated with both lower schooling levels and a reduction in the girls' adult income. Snyder *et al.*, (2006:598) further notes that there is high poverty rate among households headed by a single parent, especially the female-headed household. The low income in single parent households can also be due to the deprivation of the other provider (Chant, 2007:17). High number of children contributes to poverty.

2.5.4 Discrimination

Discrimination can be in any form such as gender or race. The disproportionately high rate of poverty among women may be viewed as the consequence of resisting their inclusion in a society that has been historically dominated by men (Jordan, 2004:20). As a result, the labour market and society stigmatise women. In this regard, the cause of poverty among women is an important structural variable to consider.

Wilson (1987:2) argues that historical racism against blacks erected contemporary barriers to their economic success. Their predicament is compounded by factors uniquely associated with deliberate policies formulated by governments. The practice of racism creates poverty to the underprivileged group which is likely to be spread to the next generation. According to the World Bank (2005:4) these discriminatory policies and practices largely emanates from governments and policy makers.

2.5.5 Unemployment

Unemployment and underemployment are significant causes of poverty that cannot be ignored. At the back of this, labour is the basic most important asset of the poor. A survey by the Asian Development Bank (2005:93) shows that the rudimentary problem of the poor is not so much lack of employment but low incomes derived from employment. This has to do with both low wage rates and the phenomenon of underemployment, where people end up taking a job below their skills level. Below is the analysis of the effect of unemployment on poverty according to Rynell (2008:6):

- Overall, a 1% increase in the total unemployment rate holding all other factors constant, resulted in an estimated 4-9% increase in the poverty rate.
- Each 1% increase in the unemployment rate of males aged 25 to 64 increases poverty by about 0.7% in the same year.
- Every 1% increase in the local area unemployment rate decreases the probability that less-educated black males are employed by 2.7%.
- Each 1% increase in unemployment is predicted to lower the growth of income among young families by 1.6% (Rynell, 2008:6).

The issues of employment and poverty are much broader since they include lack of labour rights for some categories of workers, especially those in the informal sector, child labour and illegal migration, which is sometimes the only option for the poor.

2.5.6 Population growth

According to the World Vision Report (2001:1) population growth per se is not a problem if the resources are available to cope with the additional people requiring public

services, employment, housing, and similar social services. In a country where the budget is already overextended, population growth is a major issue as it reduces growth in per capita incomes and the funds available for investment in productive sectors. This underinvestment in turn reduces overall economic growth and prospects for poverty reduction. As population growth outpaces the capacity of industry to absorb new labour, urban unemployment and rural underemployment are compounded.

Orbeta (2002) cited in the Asian Development Bank (2005:96) found that high fertility is associated with decreasing investments in human capital like health and education. Children in large families have poorer health, lower survival probabilities, and are less developed physically. Each additional child means a smaller share of family resources, income, time, and maternal care as this leads to resource dilution.

2.5.7 Governance

While much has been achieved in the process of democratisation in most governments, there is disappointment over the ability of the political system to address the needs of the society, and particularly the poor. Weak governance seems to be the major contributing factor for economies' dull performance and the insignificant impacts on poverty over the years. Governance issues are central to the widespread perception of the country on the investment incentive. Three particular governance issues affect the poverty problem and these listed below according to Gupta *et al.* (1998:7).

- Corruption. This can include poverty biased tax systems favouring the rich and well connected, poor social programs and the use of wealth by the rich to lobby government for favourable policies. Corruption can also increase income inequality.
- A weak and inefficient state. This is where the state is unable to efficiently deliver the necessary services to its population as a result of low capacity. It is also characterised by the inability to collect sufficient revenues.
- Insecurity. Underdevelopment and poverty are the result of conflicts. Violent conflict results in the decline of the state and democratic political processes and the rule of law breaks down (Gupta *et al.*, 1998:7).

Earle and Scott (2010:9) agrees to the above and add that the poor suffer most from corruption, a lack of access to justice, insecure property rights, inefficient bureaucracy and weak financial management.

2.5.8 Conflict

The causal relationship between conflict and poverty is bi-directional. Conflict causes poverty, and poverty can be one of the causes of conflict (Verstegen, 2001:9). According to Goodhand (2001:23) conflict is both a direct and indirect cause of poverty. Direct impacts are deaths and disablement. Chronic poverty is likely to surge as a result of loss of breadwinners and higher dependency ratios. Indirect impact affects more people as they suffer the negative effects of the disruption of basic services and the general collapse of the state. Justino (2009:23) concurs that conflict affects the economic status of individuals and households and therefore their poverty levels.

2.5.9 Sickness and disability

According to Masika *et al.* (1997:9) poor health can reduce individual capacity to earn an income, while health treatment can use up scarce savings or lead to debt. Sickness and disability therefore can cause poverty in the following ways (Masika *et al.*, 1997:9):

- Inadequate transportation. People with disabilities, especially wheelchair users are restricted by commuting costs and mobility concerns in public utility vehicles.
- Inaccessible workplace. Workplaces tend to be improperly designed to suit the disabled.
- Poor qualifications. Most sick and disabled do not reach levels of education that would qualify them for employment (Masika *et al.*, 1997:9).

Households that have an adult with a health problem or disability which prevents or limits them from work are at the risk for economic insecurity (Chant, 2007:3). According to Rynell (2008:14) people with disabilities and the sick have reduced prospects of getting employment and children are unlikely to reach high levels of schooling. They are therefore prone to poverty.

Individuals with disabilities also face a higher risk of exclusion. According to Shima and Rodrigues (2009:16) women, children and elderly people with disabilities suffer more from poverty and exclusion compared to males and younger people, hence they form the majority of people living in social institutions. With regard to this, people living in institutions, although the risk of poverty is lower, social exclusion increases. Sickness impoverishes already poor households, which are plunged into a progressive spiral of declining health and economic status (Grant, 2005:6).

2.5.10 Immigration

There has been much debate about the impact of immigration on the economy, labour market changes and poverty. Immigration causes poverty due to labour force growth beyond that which the economy can absorb, therefore causing lack of income. Camarota (1999:1) argues that poverty caused by immigrants is actually poverty imported from their home countries and increase the poverty in the country of immigration. Furthermore, Rynell (2008:18) notes that a higher percentage of poverty is found among immigrants.

2.5.11 Illiteracy

There is clear evidence that illiteracy tends to cause poverty. According to the World Bank (2005:1) illiterate adults are likely to give rise to the following:

- Do not to send their children to school and fail to monitor their progress.
- Health and nutritional practices of their families may be low.
- Participants neglect the environment leading to reduction in community capacity.
- Lack of solidarity and a greater awareness of their rights as citizens (World Bank, 2005:1).

UNESCO (2001) cited in Oriahi and Aitufe (2010:306) argues that illiteracy might not be the cause of poverty but definitely retards the means to reduce it. This is further

supported by Edem *et al.* (2011:15) who purports that literacy generally raises the living standards and lack of it will therefore lower the standards of living.

2.6 DIMENSIONS OF POVERTY

The spatial dimensions of poverty are of importance to policymakers. Higgins *et al.* (2010:1) highlight two explanations why dimensions of poverty should matter. Firstly because large numbers of people live in spatially disadvantaged areas and secondly because geographic unevenness makes it difficult for governments to simultaneously promote economic production and spread it out smoothly (Higgins *et al.*, 2010:1).

The World Bank (2009:10) highlights uneven economic development at local, national and international levels, which is also concomitant with the major disparities in well-being. There are large numbers of poor people living in disadvantaged areas, like slums and fragile regions that lag behind in terms of well-being in most developing countries. This poses today's biggest development challenges (Higgins *et al.*, 2010:2). Several dimensions of poverty exist and some are analysed below.

2.6.1 Gender

There is considerable research focusing on poverty and gender (Raja, 2009; Medeiros & Costa, 2006; World Bank, 2005; Barros *et al.*, 1997). All these researchers attest to the fact that more women are poorer than men. Women are lagging behind in terms of well-being support and as such bear a heavy share of poverty (Medeiros & Costa, 2006:5). Women's poverty trap slows global economic growth and development since they are gradually becoming economic actors (World Bank, 2005:1).

The role of women, as productive agents, is becoming vital in a rapidly changing global economic scenario. However, there is a need to improve the quality of female labour force and involve women in the developmental activities so as to reduce female poverty. In general women are less educated, have less access to health facilities, less control of assets, less access to social security, less access to financial resources and less earning capacity. These characteristics are blamed for the higher incidence of poverty among females (Siddiqui, 2001:1).

2.6.2 Children

Child poverty refers to poverty experienced during childhood by children and young people. It differs from adult poverty in that it has different causes and effects, and has permanent effects on children (Munijin & Delamonica, 2005:11). No single dimension of well-being stands as a reliable proxy for child welfare as a whole and therefore several countries find themselves with widely differing rankings for different dimensions of child well-being (UNICEF, 2007:3).

Moore *et al.* (2009:3) notes that children are almost twice as likely to be poor as adults and this rate is consistently increasing. This means that poverty is concentrated among children. Interest in child poverty arises because children raised in poverty are at increased risk of a wide range of negative outcomes that are identified at birth and can extend into adulthood. Negative outcomes are particularly associated with deep and long-term poverty. Concentration of poverty among children is perilous in that it reduces their social and emotional development, education, health and economic outcomes when they become adults (Moore *et al.*, 2009:4-5). Urban children are generally considered to be better off than rural children: healthier, better housed, better educated and with access to a wider range of services and opportunities. Cities can indeed offer these advantages, but the reality is that the majority of urban children live in deep poverty, their rights neglected, their needs unmet and their prospects damaged (UNICEF, 2002:2).

2.6.3 Rural

According to Bird *et al.* (2000:5) much development thinking predicts rapid urbanisation and a slow rural development policy usually ushered in by donor agencies. In the vast majority of developing and transitional countries, rural poverty (whether measured by income/consumption data or other indicators) has been and remains at higher levels than in urban areas. Laderchi *et al.* (2003b:12-13) note that the majority of poor people in rural areas are landless peasants, female-headed households, older people and their dependants, orphaned and people living in areas prone to natural calamities. Since the study is based on poverty in a township, the following section analysis urban poverty.

2.7 URBAN POVERTY

Although poverty is concentrated in rural areas, the urban centres are increasingly experiencing rising levels of poverty. Urban growth has accelerated in many developing countries during the past few years. While natural population growth has been the major contributor to urbanisation, rural-urban migration continues to be another important determinant (Masika *et al.*, 1997:1). The growth in the urban population without a corresponding increase in the resources provides an inescapable growth of urban poverty. According to Bloom and Khanna (2007:13) most governments advocate for the implementation of the policies that deter urbanisation as a way of reducing urban poverty.

According to Gilbert and Gugler (1992) cited in Masika *et al.* (1997:2) there is much diversity between nations and regions in terms of the age of the immigrants and the extent to which migration is considered permanent or temporary. The issue of permanent migration is not easy to detect because most poor people do not detach themselves from rural areas although they may be staying in the urban areas. The key driver of migration is the economic motive prompted by the income differential between rural and urban regions (Masika *et al.*, 1997:3). The United Nation's Population Fund (UNPF) (2007:1) purports that global urban population growth will continue to be a discussion issue. Urban population is estimated to grow from 3.3-billion people in 2008 to almost 5-billion by the year 2030. The pace of urbanisation far exceeds the rate at which basic infrastructure and services can be provided, and the consequence is the increase in the number of the poor. Failure to prepare for this inevitable urban explosion carries serious implications for global security and environmental sustainability (Garland *et al.*, 2007:1).

According to Barker and Schuler (2004:1) much literature focuses on analysing poverty at the national level, with little focus on segmenting townships and rural poverty. There is need for this segmentation due to price variations between the rural and urban setup. Emanating from this, there is no consensus on the definition of urban poverty. Wratten (1995:2) agrees with this assertion and identifies two broad prevailing approaches, thus the economic and anthropological interpretations. Conventional economic definitions

use income or consumption together with a range of other social indicators such as life expectancy, nutrition, the proportion of the household budget spent on food, literacy, and access to health clinics or drinking water (Masika *et al.*, 1997:2).

Studies on urban poverty point out its broad nature. Garland *et al.* (2007:1) note that urban poverty indicators are not unique to a nation but a global urban challenge and therefore need a global response. The slum growth in the urban centers is usually equated to policy. According to Garland *et al.* (2007:2-3) market forces alone cannot resolve the problem of urban growth. In the past, the population in the urban areas has suffered a lot from housing needs. Recent years has seen a significant shift from housing needs to housing rights where people believe that the government has to provide houses for them (Masika *et al.*, 1997:12). While the dimensions of poverty are many, there is a subset of characteristics that are more pronounced for the poor in urban areas and may require specific analysis. These characteristics were noted by Baker and Schuler (2004:3) as follows:

- Heavy reliance on the cash economy.
- Overcrowded conditions especially in the slums.
- Environmental hazard stemming from high density and hazardous location of settlements.
- Exposure to multiple pollutants.
- Social fragmentation as indicated by lack of community and mechanisms for social security, relative to those in rural areas.
- Traffic accidents (Baker & Schuler, 2004:3).

Hassim (2009:1) argues that poverty levels in small towns are higher than medium and large towns. Smaller towns are in most cases ignored and therefore face the problem of overcrowding and informal settlements. Due to their size, industrialisation and employment prospect for the dwellers are low.

2.7.1 Why study urban poverty?

The study of urban poverty is essential for economic development purposes. The following are some of the reasons highlighted by researchers for studying urban poverty. There is the problem of crime and violence which is mostly concentrated in city slums. Most slum dwellers depend upon unstable employment in the informal sector, characterised by low pay and poor working conditions. Illegal settlements are often located on hazardous land in the urban periphery. Perhaps most alienated in the informal settlements are growing youth populations whose unmet needs for education, health, and jobs can lead to social problems. Security in urban areas is therefore greatly diluted (Garland, *et al.*, 2007:2).

There is the issue of strategy development. Urban poverty analysis can facilitate the identification of key urban issues using quantitative measures of urban poverty and community priorities. A comprehensive analysis of key urban issues in a particular city can help define strategic options and implementation alternatives (Baker & Schuler, 2004:6). Local Economic Development (LED) is a more economically driven urban strategic tool that offers local government, the private sector and the local community the opportunity to work together to improve the local economy. It focuses on enhancing competitiveness, thus increasing sustainable growth. Urban poverty analysis can be used to highlight opportunities and constraints to economic opportunities in the form of surveys employment structure and household responses to poverty (Baker & Schuler, 2004:6).

Urban poverty study can help service delivery and city budgeting. New approaches to service delivery require new information. Urban poverty analysis can be an effective tool in gathering and analysing information for the purposes of designing and implementing mechanisms for service delivery such as slum upgrading, infrastructure and land administration (Baker & Schuler, 2004:6). Statistics often mask the severity of conditions for the urban poor. This stems from the use of aggregated results. According to Baker and Schuler (2004:2) this aggregation is not sufficient to answering individual town needs to tackle the problems of poverty. While demographic indicators for quality of life of urban dwellers can be higher than for their rural counterparts, data reveals

severe inequality, exclusion and differences in levels of access to services (Garland *et al.*, 2007:2).

Urban poverty study can help policy and project monitoring. Policies aimed at slowing urban growth should shift their attention to the positive factors that affect fertility decline, social development, investments in health and education, empowerment of women, and better access to reproductive health services (UNPF, 2007:13). This tackles natural increase not immigration. One area of urban anti-poverty policy that has witnessed much theoretical and empirical work is urban employment creation and self employment. This however tends to be biased towards the non-poor (Masika *et al.*, 1997:12). In policy application, the definition of poverty becomes essential. An improper definition can be misleading. When poverty is defined in narrow monetary terms, policymakers may tend to think of poverty alleviation mainly in terms of labour markets (Montgomery, 2009:3). Policies should also work to provide land, infrastructure, and services for the poor (UN-HABITAT, 2003:2).

Some measures of poverty that incorporates inequality are becoming common. This is because the main driver of poverty cannot only be attributed to the lack of resources in the economy but also to the inequalities in the distribution of the country's resources. A study of poverty can therefore be better understood by the studying of inequality as well (World Bank, 2008:1).

2.8 INEQUALITY

Inequality refers to disparities in relative income across the whole population (Bourguignon, 2004:4). Income distribution is a longstanding global problem and accordingly, poverty eradication measures should direct their focus to income and wealth redistribution (Walsh, 2008:15). Knowing the number of the poor in an economy and the country's per capita income is not adequate. The average quality of life also depends on how equally or unequally income is distributed.

A general change in the distribution of income cannot naturally mean a change in the inequality in the economy. The change can be decomposed into two effects. First, is the effect of a proportional change in all incomes that leaves the distribution of relative

incomes unchanged, this is the growth effect. Second, there is a change in the distribution of relative incomes which, by definition, is independent of the mean, this is the distributional effect. The latter can have an effect in the level of inequality in the economy (Bourguignon, 2004:3).

Incomes may be unevenly distributed within an economy and globally. The interest in global inequality became inherent due to large disparities in countries incomes that may trigger migration. This global income inequality is further felt in the unequal voting or bargaining power in international institutions (Anand & Segal, 2006:3-4). According to Milanovic (2005) cited in Anand and Segal (2006:4) there is a useful distinction between three concepts of world income inequality which are outlined below as:

- Inequality among countries in their levels of average per capita income.
- Between-country inequality, which is inequality among individuals in the world with each individual, assigned the average per capita income of his or her country of residence.
- Global inequality, which is inequality among individuals in the world with each individual, assigned his or her own (per capita household) income (Anand & Segal, 2006:4).

The inter-country inequality is the main drive to migration between countries. This occurs where people from relatively poor countries migrate to raise their living standards. Supporters of the anti-globalisation movement argue that globalisation has dramatically increased inequality between and within nations, and in particular that it has marginalised the poor in developing countries and left behind the poorest countries (Kremer & Maskin, 2003:2). Inequality is not only in the distribution of income. Some people with low incomes have lots of assets and should not necessarily be considered poor. For that reason care should not be put unduly on poverty at a point in time; only if people have low incomes for a long period are they likely to be seriously deprived. According to Davies *et al.* (2006:32) household wealth is more unequally distributed than income. Some countries with low income inequality report higher wealth inequality. This conclusion depends, however, on the measure used, survey design and the

exclusion of some types of assets. An example would be older people who have higher net worth and less material deprivation than younger people. Estimates of old-age poverty based on cash income alone exaggerate the extent of hardship for this group (Davies *et al.*, 2006:33).

According to the World Bank (1991:39) causes for greater income inequality which is prevalent in the developing nations compared to developed countries lie in the following factors:

- Inequalities in ownership and access to land, resources and assets for historical, cultural and social reasons.
- Scarcity of professional and technical skills leading to different remunerations.
- Widespread existence of imperfect factor mobility and information, also monopoly power based on economic or political strength may account for existing disparities.
- Social structures that exclude people on the basis of background, race, sex or religion from jobs (World Bank, 1991:39).

High inequality is also correlated with greater social exclusion, declining confidence in the government, and impaired functioning of democracy. Public services such as education and health can be powerful instruments in reducing inequality. In an endeavour to reduce inequality, fiscal management suggests the implementation of taxes and transfer payments to change the distribution of income (World Bank, 1991:40). The disquieting issue about inequality is that it threatens political stability. People can be unsatisfied with their economic status and this discourages certain basic norms of behaviour among economic agents such as trust and commitment. However, inequality is necessary since it encourages workers incentives, product quality and economic growth (Hout *et al.*, 1997:6-7).

2.8.1 Differences between poverty and inequality

Though poverty and inequality are related, one does not presume the other. Although poverty does not assume inequality, measures of inequality are useful in the evaluation

of relative poverty. Poverty and inequality vary in the following aspects (Bhorat *et al.*, 2003:3-7):

- A country with low levels of poverty may have high inequality.
- Fair and equal society may still have high levels of poverty. This is the case especially where a country is poor but income fairly distributed. In consequence, many developing nations may have lower gini-coefficient than South Africa but be poorer than South Africa.
- Poverty and inequality respond differently to growth. High growth might help roll back poverty, but exacerbate inequality. This confronts policy makers with a difficult choice on which one to prioritise? Under socialism the priority would be equality but under rampant growth philosophies, combating poverty will be the priority.
- A society in economic development stage, transiting from poor to less poor, experience rising inequality. Thus, whilst progress is being made with poverty reduction, inequality may be worsening (Bhorat *et al.*, 2003:3-7).

2.8.2 Means of reducing inequality

Reduction of inequality is necessary since these inequities can become entrenched and affect the development of institutions and policies in negative ways. Due to the negative impact of inequality, policymakers should worry because of their goal of social justice and maximisation of social welfare (Should, 2001:332). However, the move toward less inequality is not automatic. The following are the suggested ways of reducing it according to Anon (2008:3-4):

- Introduction of an increase in the value of the national minimum wage.
- Increases in the real value of child benefit.
- New programme for the long-term unemployed.
- Expansion of child-care schemes including that incorporates low-income mothers who want to work.
- Gradual shift towards means tested benefits rather than universal benefits.

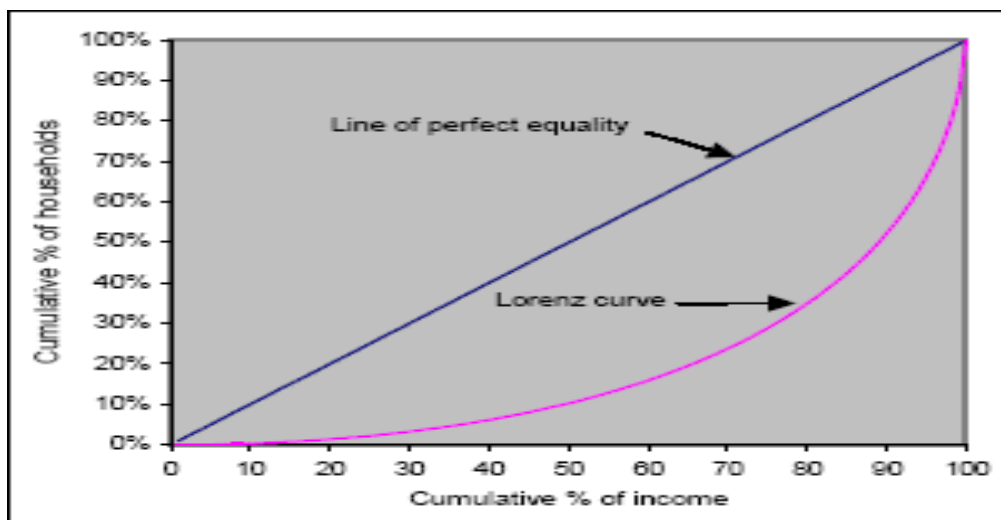
- Educational maintenance grants for people staying on in further education beyond the age of 16.
- Financial support for key workers to get a mortgage and move onto the housing ladder.

A society in which income is distributed perfectly equally would not be a desirable place either. People who work harder, or are more talented than others, should have more income. What matters, in fact, is equality of opportunity, not equality of outcomes (Anon, 2008:3-4).

2.8.3 Measuring Inequality

There are several ways of measuring inequality. The most commonly used measures are the Lorenz curve, Gini-coefficient and the Quintile ratio. The Lorenz curve represents the distribution of income. It is a graphical representation of wealth distribution developed by American economist Max Lorenz in 1905. The illustration of the curve is shown in **Figure 2.1** below.

FIGURE 2.1 LORENZ CURVE



Source: Human Science Research Council (HSRC), 2005:4

On the figure, a straight diagonal line represents perfect equality in income distribution; the Lorenz curve lies beneath it, showing the actuality of income distribution. The curve

plots the cumulative percentages of total income received against the cumulative percentages of recipients, starting with the poorest individual or household. The deeper a country's Lorenz curve, the less equal is its income distribution (HSRC, 2005:4). This method of measuring inequality is conceptually very similar to the method by quintiles. However, instead of ending up with income shares, the Lorenz curve relates the cumulative proportion of income to the cumulative proportion of individuals (Bellu, 2005:2).

The difference between the straight line and the curved line is the amount of inequality of wealth distribution, a figure described by the Gini-coefficient, which is calculated from the Lorenz curve. The Gini-coefficient measures the area between the Lorenz curve and a hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line. When actual incomes are distributed unequally, the Lorenz curve is bowed further away from the diagonal line. Along the line of perfect equality, the 45-degree line represents perfectly equal income distribution (HSRC, 2005:5). In geometric terms the Gini coefficient is measured as:

$$G = \frac{\text{Area between Lorenz curve and line of perfect equality}}{\text{total area below line of perfect equality}}$$

Source: HSRC, 2005:5

The Gini-coefficient varies between 0 and 1 where 0 corresponds to perfect income equality (i.e. everyone has the same income) and 1 corresponds to perfect income inequality (i.e. one person has all the income, while everyone else has zero income) (Bhorat *et al.*, 2003:3). In a situation of perfect equality the Lorenz curve would overlap the line of perfect equality and the Gini-coefficient would equal zero. In the theoretical situation of one household earning all the income, the Lorenz curve would coincide with the axes and the Gini coefficient would equal one (Bhorat *et al.*, 2003:3).

This coefficient is characterised by a number of advantages such as relative simplicity, anonymity, scale independence, and population independence. On the other hand, the Gini coefficient belongs to the group of operational measures: its evolution in time is not

theoretically linked to macroeconomic variables and the differences observed between countries are not well explained. These caveats make the Gini coefficient more useful in political and social applications not in economics as a potentially hard science (Kitov, 2007:24).

This method of calculating inequality only reflects the unequal distribution of income in countries and assumes that income is equally distributed within the countries themselves (Anon, 2002:1).

2.9 SUMMARY AND CONCLUSION

According to the past poverty research, records on poverty dates as back as from 16th century. Proper documentation was first done by Rowntree (1901). Many researchers then emerged lining their results with what was discovered by Rowntree. Different organisations, entities and individuals have shown interest on the subject of poverty and these include UN, WB, FAO, UNICEF, UNESCO, ILO and WHO among others. In South Africa, a good track of poverty record was done even long before the democratic government. The prime focus was White poverty with little attention on poverty among the Blacks. After 1994, poverty research became less inclined and followed the international standards. Current poverty research point the chronic nature of the poverty in South Africa.

There is controversy in the definitions and understanding of poverty making it a complex phenomenon. It has a series of contested definitions and complex arguments that overlap and at times contradict each other. These arguments go beyond academic debates. The vast majority of the existing studies of the subject are concerned with identifying the best criteria of defining and measuring the concept of poverty. However, defining poverty is important since a proper definition imply the usage of a proper criterion for measurement, as well as the use of a proper poverty reduction strategy.

Poverty can be defined in an absolute or relative terms. In absolute terms, the poor are those who are unable to satisfy basic needs, thus living below subsistence. The relative approach is a more subjective measure than the absolute approach. Definition of

relative poverty is based upon a comparison between the standard of living of those who are worse-off and to that of the society in which they live in.

Other school of thought views poverty in terms of social exclusion. This is when people do not feel as full members of the society and therefore fail to participate in the mainstream activities. Including social exclusion in the definition of poverty explains a wider notion of poverty. The narrow definition merely explains poverty as a lack of sufficient income necessary for living. Poverty can also make people fail to have certain capabilities like attaining the minimum for survival. The UN views poverty in terms of human scale development and uses education, life expectancy and income levels. The different existing definitions and measures take into account the uncharacteristic nature of poverty. Each definition contains a part of truth but no single definition holds the full truth in defining poverty.

There are various ways to measure poverty. The main measures of poverty discussed in this study are the poverty lines, head-count index, poverty gap ratio, dependency ratio, Foster-Greer-Thorbecke index, Sen-Shorrocks-Thon index and the Watts index. All these measure yield different result, hence the subjective nature of poverty. Specifying a poverty measure is not a simple task. Indeed, many conceptual and methodological issues should be addressed before specifying a certain poverty measure, such as the individual welfare indicators, who is really poor and how information describing the poor population be synthesised into a synthetic poverty measure. Literature dealing with these questions emphasises that it is often hard, if not impossible, to find a consensus on the process yielding an appropriate poverty index.

The causes of poverty are diverse and peculiar to a society or economy. Knowing the causes is important to policies that attempt to fight it. Poverty has many dimensions. Research indicates that it is mostly concentrated among women, children, sick and in the rural areas. Since this study will be based on township poverty, a theoretical background of urban poverty has been provided. Recent urban poverty researches indicate rising levels of urban poverty which cannot only be attributed to urbanisation only but other factors as well. The study of poverty therefore indicates a long way.

Poverty is different from inequality. Inequality shows relative living standards of the entire population. Even though poverty and inequality are related one does not automatically lead to the other. There are many ways of measuring inequality, all of which have a mathematical appeal. The Lorenz curve shows the distribution of income earned in relation to its recipients, whereas the Gini-coefficient measures the degree of inequality based on the areas on the Lorenz curve. The following chapter studies the consumer theories and the demand patterns.

CHAPTER 3 THEORIES OF CONSUMER CHOICE AND DEMAND SYSTEMS

3.1 INTRODUCTION

Demand is one of the fundamental concepts of economics and also forms the basis of micro-economic theory. Micro-economic theory deals with the economics of individuals and explains the behaviour of individual consumers and producers in the market place. Consumer behaviour and the reason why some commodities are chosen instead of others has always been a subject of research interest. Consumers react to price changes, making price changes an undoubted important element in the formulation of monetary policy (Marini, 2009:1).

Numerous policy decisions are based on household consumption information where surveys are the main information source. To avoid biased and distorted results, high-quality economic indicators during the calculation of consumption indicators from household consumption surveys have been a challenge for both statisticians and economists (Deaton & Zaidi, 1999:39). Although demand analysis forms the basis of economics, little interest has been devoted to the valuation of consumption habits of the poor. This valuation is of considerable interest as consumption by the poor can be a significant focus in the sphere of research (Meyer & Sullivan, 2004:3).

The study of demand in isolation from supply is partial, but for the purposes of this study, only an overview of the demand theory is studied in this chapter. This includes consumer utility theory, the law of demand, elasticities and goods that do not obey the law of demand. Lastly the chapter focuses on consumer welfare economics.

3.2 CONSUMER THEORY

The consumer theory describes in detail the process by which consumers make choices among the alternative commodities available at any given point in time. Barten and Bohn (1982:1) noted that consumers aim to maximise the satisfaction by selecting the best possible combinations of commodities that are affordable. The historical development of the consumer theory indicates a long-standing discussion on the

subject. There is dispute in the history of consumer theory over the criteria to be employed when judging the validity of the theories (Clarkson, 1962:1). The subject of consumer theory has undergone substantial changes over time, originating from the traditional theory which assumed a finite number of commodities to recent studies involving a variety of goods. Below is a discussion of the consumer theory and the law of demand together with the utility theory and the demand theory.

3.2.1 Consumer behaviour

For the consumer theory to hold, the following assumptions are imperative:

Rational Behaviour. The consumer acts in a rational way and tries to dispose his/her income to derive the greatest amount of satisfaction. Consumers want to get the most from their income (Tian, 2009:32-34).

Preferences. Preferences and tastes play an important role in consumption decisions. According to Browning and Browning (1992:35) there is huge diversity in the preference for goods and services. Pertaining preference, the following is further assumed:

- The consumer can rank the preferences by preferring A to B, or B to A or being indifferent.
- The preference rankings are assumed to be transitive. This means that if the consumer prefers A to B and B to C, then he prefers A to C.
- The consumer prefers more to less, especially if such a choice does not mean having less of the other good (Browning & Browning, 1992:35).

Budget constraint. According to Browning and Browning (1992:30) a budget constraint is a continuous line, reflecting the assumption of functional divisibility, thus fractional units that can be purchased. The consumer money income is limited. According to McConnell and Brue (1996:141) all consumers face this constraint.

Price. Scarce goods have a price since they are produced from scarce resources. When there is a change in the price, the budget constraint changes as well. In cases

where the price of the good falls (increases) more (less) of that good can be bought and therefore the budget changes, holding other factors the same (Krueger & Perri, 2011:5).

3.2.2 Utility theory

Kohler *et al.* (2010:157) define utility as the degree of satisfaction derived by a household or a consumer from the consumption of goods or services. According to McConnell and Brue (1996:139) utility is a want satisfying power. Consumer behaviour can be restated as maximisation of utility given the available means and the alternative consumption possibilities. The maximisation of satisfaction depends on the amount of goods consumed. McConnell and Brue (1996:139) further note that economists simply theorise that consumers' wants can be fulfilled as consumption increases, but this cannot always be true. The general consensus among economists is that utility is a subjective and abstract concept since the satisfaction gained from consumption differs within individuals and is difficult to measure (Conceicao & Bandura, 2009:1; Bouyssou & Marchant, 2011:457; McConnell & Brue, 1996:139). The subjective nature comes into play because of the difficulty in comparing one individual's opinion with that of another since utility cannot be physically measured (Smit *et al.*, 1996:169). Also, the individuals' utility varies due to different tastes, time period and place.

Writers have attempted to distinguish between cardinal and ordinal utility. According to the cardinal utility theory, utility can be measured in some form while ordinal utility involves the ranking of different kinds of consumer goods and services in the order of preference (David, 2003; Mandler, 2001; Barnett, 2003:41). The utility approach is based on the assumption that a consumer can put values to the amount of satisfaction derived from the consumption of a commodity. Besides this assumption, it will be difficult, if not impossible to study utility. The study of utility is commonly based on the premise that utility can be measured in physical units.

3.2.2.1 Marginal utility

According to Mohr *et al.* (2008:185) one of the earliest marginal utility proponents was Bentham (1748-1832) and latter Walras (1834-1910) and Menger (1840-1921). Gossen (1810-1855) cited in Mohr *et al.* (2008:185) studied the marginal utility theory and

defined it as the extra satisfaction derived from the consumption of a commodity. As more of a commodity is consumed during any time period, the marginal utility declines, reaches a zero and becomes negative. This phenomenon is referred to as the law of diminishing marginal utility, alternatively called the Gossen's first law formulated in 1854. Smit *et al.* (1996:171) broadly define marginal utility as the satisfaction an individual derives from consuming successive units of a particular commodity and which diminishes as total consumption of a commodity increases while the consumption of other commodities remain constant.

Total utility is the summation of marginal utilities. When more units of a particular product are consumed, total utility will increase at a decreasing rate due to the law of diminishing marginal utility (McConnell & Brue, 1996:140). The early thought hoped that with the development of the marginal utility theory, it will, with progressive research, be possible to measure satisfaction objectively. Disappointing to date, the only measure of utility is subjective, making interpersonal utility comparisons impossible.

The decision to consume is derived from a combination of needs, wants, desires and the ability to purchase. A consumer may desire to buy a certain number of goods but actual consumption depends on how much an individual's ability to pay (Schiller, 2010:45). Individuals, nevertheless attempt to maximise utility of their purchases, subject to the limited budget at their disposal. There is an alternative way of analysing consumer behaviour in addition to the utility approach. This is the indifference curve approach which is studied below.

3.2.3 Indifference curve approach

The indifference curve shows all the combination of two products that yields the same level of satisfaction (McConnell & Brue, 1996:151). It is a graph showing different bundles of goods in which the consumer is indifferent. Each point on the same indifference curve renders the same level of utility. A representative sample of a set of consumers' indifference curves is called an indifference map (McConnell & Brue, 1996:152). In the indifference map, the curves further away from the origin indicate more quantities of each goods that can be consumed and therefore a greater level of

utility. The indifference curve approach was developed by Pareto and Edgeworth in the 20th century and is based on ordinal utility theory which assumes that an individual can rank bundles in the order of preferences. This theory has been further developed by other economist all complying with the original development (Barnett, 2003; David, 2003).

3.2.3.1 Properties of an indifference curve

The indifference curve exhibits the following properties:

Convex to the origin. This is because of the law of substitution where an increase in the consumption of one commodity reduces the consumption of the other. The rate at which a consumer is willing to sacrifice one good for another is called the marginal rate of substitution (MRS). According to Mohr *et al.* (2008:187) the scarcer a good, the greater its substitution value and the marginal utility of a good increase as the good becomes scarce.

Downward sloping. A normal indifference is downward sloping from left to right (McConnell & Brue, 1996:151). This explains that to increase the quantity of one good, one has to reduce the quantity of the other. The higher curves are preferred to the lower one since more is preferred.

Indifference curves do not intersect. If otherwise, there will be a violation of the assumption; all combinations on the indifference curve yields the same utility and higher indifference curves yield more utility (Browning & Browning, 1992:39; Bernheim & Whinston, 2008:101).

Monotone preferences. If utility functions are strictly monotonous, the marginal rate of substitution equals the price ratio. Weak monotonicity says that more is better (Tian, 2009:36) .

Differentiable points on the indifference curve. This implies that the slope should be obtainable at any point in the indifference curve (Epplé & Romano, 1996:64).

3.2.3.2 Budget limit

Individual behaviour and the consumer theory in modern economics are based on a rational agent who will always choose the best bundle from the set of affordable alternatives. In the basic problem of consumer's choice, not all consumptions bundles are affordable due to a limited resource economy where the consumer is constrained by his/her wealth (Tian, 2009:32). The following inequality should hold at a consumer maximising point.

$$Px \leq Y \dots\dots\dots 3.1$$

Where:

P = the price of a commodity

x = the quantity of the commodity purchased

Y = income (wealth)

Source: Tian, 2009:33

3.2.3.3 Changes in the price

Reasonably, changes in the price of any good will change the consumer equilibrium point. An equilibrium point is the one where the highest possible level of utility is obtained. A rise in the price of one good will mean a fall in the total quantity that can be purchased, assuming constant income. With a price rise of one commodity, the budget line will shrivel inwards. The consumer point of equilibrium will then change to a new and lower point. If the price of the same good continuously changes, the budget line will continue shriveling inwards, moving the consumer to lower indifference curves. Joining the points of equilibrium following continuous price fall gives a Price Consumption Line. This is the line showing the combination of two goods that can be demanded if the price of one good continuously changes (Pindyck & Rubinfeld, 2005:1).

3.2.3.4 Price changes and choices

The change in consumer choice as a result of a price change can be decomposed into income and substitution effect. Of importance is that the sequence of the decomposition starts with substitution and then the income effect. Substitution effect considers the trade-off between different goods as a result of a price change (Miller, 2003:50).

The income effect can be either positive or negative depending on whether a good is normal or inferior. An inferior good is a good with a negative income effect. For such goods, increase in income results in a fall in the demand for the good, and vice versa (Miller, 2003:57). A normal good has a positive income effect where an increase in income results in an increase in the demand for a good. A giffen good, on the other hand is one where the demand for the good rises even if the price goes up. A detailed study of these goods will be done latter in this chapter.

In the consumer choice, the following assumptions are made;

- The consumer always spends her entire budget, thus the Walras' Law should be satisfied. Walras' Law states that a consumer with locally non-satiated preferences will consume her entire budget. Walras further states that when considering any particular market, if all other markets in an economy are in equilibrium, then that specific market must also be in equilibrium (Miller, 2003:14).
- Only relative prices matter. This is because relative prices affect the set of allocations in the budget set. An example would be doubling each price and wealth which leaves the budget set unchanged (Miller, 2003:14).
- Choices reveal information about stable preferences. If a consumer is given a choice between good A and B then chooses good A. If seen consuming good B, the assumption will be that he was not offered good A. This is the assumption that preferences stay constant. This requirement is known as the Weak Axiom of Revealed Preference (WARP) (Miller, 2003:9-10). WARP is a requirement of consistency in decision-making (Miller, 2003:18).
- Homogeneity of degree zero. Any change that does not affect the slope of the budget lines should not affect the cost-minimising bundle, though the expenditure

on the cost minimising bundle might be affected. The slope of the expenditure line is determined by relative prices and scaling all prices by the same amount does not affect relative prices (Miller, 2003:11).

Consumer demand is a function of multiple factors in addition to prices, including product quality, advertising, preferences, and other demand shift variables.

3.2.3.5 Changes in income

The consumer income can change while prices remain constant. Conceivably, an increase in income causes a parallel shift of the budget line to the right. This indicates that more of each good can be purchased and therefore the consumer moves to a higher indifference curve yielding a higher level of utility. If the consumer income continuously rises, joining the new and the old points of equilibrium gives the Income Expansion Path (IEP) (Tian, 2009:65).

3.2.3.6 Engels curves

Engels curves are functions that relate income to the demand for each commodity at constant prices (Tian, 2009:65). They are constructed by joining all the points of equilibrium, thus the IEP. Two possibilities exist, as income increases, the optimal consumption of a good increases in the case of normal good and the optimal consumption of a good decreases in the case of inferior good (Tian, 2009:65). For the two-good consumer maximisation problem, when the income expansion path (and thus each Engels curve) is upward slopping, both goods are normal goods. When the income expansion path could bend backwards, there is one and only one good that is inferior, increase in income means the consumer actually wants to consume less of the good (Tian, 2009:65).

The increase in income does not always mean an increase in the consumption of goods since it depends on whether the good is normal or inferior.

3.2.4 Normal and inferior goods

Substitution effect is always negative while income effect can be positive or negative depending on whether the good is normal or inferior. Normal goods have a positive income effect and income and substitution effects move in the same direction (Mohr *et al.*, 2008:168). For normal goods, demand increases as income increases. The income and substitution effects of a price change reinforce each other when a normal good's own price changes. Normal goods are most common compared to inferior goods. Inferior goods are those where the income and substitution effects go in opposite directions (Kaizeler & Faustino, 2011:54). For inferior goods, demand is reduced by higher income, making the substitution and income effect act on opposite direction when an inferior good's own price changes. Slutsky discovered that changes to demand from a price change are always the sum of a pure substitution effect and an income effect.

When the price of a good decrease, at the new optimal choice much of that good is consumed compared to original. In the case of an inferior good, ignoring the negative income effect actually makes the change in quantity demanded larger for a given change in price because the income effect acts against the total change in demand making it smaller. The Slutsky approach of aggregate price effect decomposition can also be applied in the same way as Hicks (Sagi & Pataki, 2010:1).

3.2.5 Giffen goods

Giffen goods are consumer goods for which demand rises when the price increases, and demand falls when the price decreases thereby violating the law of demand (Jensen & Miller, 2008:2). In normal situations, as the price of a good rises, the substitution effect causes consumers to purchase less of it and more of substitute goods. In giffen good scenario the income effect dominates, making individuals buy more of the good, even as its price increases. This is the basis of an upward sloping demand curve. The price elasticity of demand for a giffen good is therefore positive.

The first feature of a giffen good is that the item has to either lack close substitutes or the substitutes should be more expensive, forcing consumers to buy more of a giffen item since they cannot afford a superior good. A giffen good is actually a type of inferior

good for which demand declines as the level of income in the economy increases (Bailey, 2010:2). The second feature is that if the income of consumers falls, they will reduce their purchase of luxuries and will buy more of a giffen good instead to fill themselves up.

Giffen goods are usually experienced by the very poorest where the demand for the good is driven by poverty. This giffen good is usually a basic good offering a high level of calories at low cost (Jensen & Miller, 2008:1). The more expensive good is however preferred because of its taste but provides few calories at a high cost. The poor will therefore eat a lot of a giffen good in order to get enough calories to meet basic needs. If the consumer increases the consumption of a non giffen good, that consumer will fall below his required caloric intake.

The same good can fall in different categories to different consumers. A good can be normal to one consumer, inferior to another and a giffen to the other. A giffen good differs from the veblen good (though both have a positive sloping demand curve) in that with the latter, people buy because the good is expensive and is indicative of wealth. Therefore it is a superior good with respect to income, but if the price falls, less of the good will be in demand.

The overall theory of consumption attempts to explain how the consumer finally demands a good in the market. Basing on the need to achieve higher utility, the indifference decision that the consumer can face and the budget limit, the consumer will then have to make a purchase of the good. The next section studies the demand theory.

3.3 THEORY OF DEMAND

The theory of demand dates as early as the 18th century when Steuart (1767:2) noted the relationship between price and quantity demanded. After noting this relationship, Steuart later termed some items necessities and for some he used the term 'indifferent'. Since then, the theory of demand has gained popularity in microeconomics and has dominated most texts. Studies on the topic are still based on the original findings, agreeing with the relationship between quantity demand and price (Schroeder *et al.*,

2000:1). However, McColloch (2011:1) feels that scholars in the history of economic thought have devoted so little attention to the work of Steuart.

3.3.1 Determinants of demand

Many factors converge to influence demand and regulate its underlying conditions. When the weight of a given factor is considered, the *ceteris paribus* assumption holds and only the factor under consideration is varied. The term *ceteris paribus* is a Latin word meaning other factors remaining the same. The factors discussed below are not exhaustive since several factors affect demand. Some can be peculiar to a certain culture, race and uniqueness of the individual. Due to this, only the selected factors are analysed below.

Price: The price of a good or service is the value of one unit of a good or service (Dohn *et al.*, 2008:1). The decision to purchase is not entirely dependent on the price of one good but also on the price of other goods, bringing the case of relative prices. Relative price is the ratio of one price to another (Browning & Browning, 1992:7) expressed as follows:

$$P_x / P_b \dots\dots\dots 3.2$$

Where:

P_x = the price of good x.

P_b = the price of a basket (Kohler *et al.*, 2010:60).

An increase in the relative price of one good makes it more expensive compared to other goods. This can occur in periods of stable average prices, inflation or deflation. When relative prices change, the average price level may fall or rise (Schiller, 2010:131).

Net Wealth: According to McConnell and Brue (1996:44) the way in which current money income affects demand is very complex because demand does not only depend on current income but also on accumulated wealth. Net wealth is an indicator of a

household's current and future assets. Limit to the use of mere income is that a household with zero current income can demand some goods from past savings and sell of assets hence some economists use net wealth.

Tastes/preferences: This is the desire for goods. According to Schiller (2010:47) tastes can be used interchangeable with desire. Preference and taste rise due to advertising, addiction and custom.

Prices of other goods: The prices of complements and substitutes affect the demand of the good in question. Complementary goods are consumed in conjunction while substitute goods can be consumed in the place of the good in question. Smit *et al.* (1996:105) highlights the complicated case where the price of fuel rises, resulting in the rise of prices of other goods and therefore a fall in their demand. Goods that are not related are called independent goods (McConnell & Brue, 1996:44).

Expected future prices: Consumer expectation about a product's future price, its availability and future income can change demand. A belief that the price of a product will rise (fall) in the future will increase (reduce) the current demand for that good (Viljoen, 1998:22).

Population: An increase in population increases the demand for goods and services, *ceteris paribus*. This composition can be in terms of the ages of household members, gender, as well as the age of the household head which play a role in determining the demand patterns (McConnell & Brue, 1996:44).

3.3.2 The demand curve

This section will not go into details of basic micro-economics explaining the demand curve but will define the demand curve and move to the types of demand curves. A demand curve shows an estimate or conjecture about the relationship between the price of any particular product or service and the quantity of that product that will be demanded by consumers. It usually slopes downwards for most commodities, depicting that at a lower price, quantity demanded is high and vice versa. The demand curve is simple to understand and permits clear expression of complex relationships (McConnell & Brue, 1996:42).

3.3.2.1 Types of demand curves

Demand curves that slope downwards from left to right are said to obey the law of demand. The demand curves discussed below basically take the same shape but differ in the way they were derived.

3.3.2.1.1 Marshallian demand curve

The Marshallian demand curve is named after Alfred Marshall, who was the first person to graphically illustrate demand using price and quantity demanded. According to Bernheim and Whinston (2008:33), Marshall is referred to as the demand and supply economist since he is the originator of demand, supply and equilibrium. His early demand thought suggested that the first step in economic reasoning is to examine the market situations connected to the adjustment of price (Davenport, 1908:36; Marshall, 1890:323). Since then, economists have used Marshall's theoretical framework to analyse market situations. Tian (2009:54) is in agreement with the Marshallian demand curve and regards it as an ordinary market demand curve. This demand is sometimes called Walrasian demand, named after Léon Walras, or the uncompensated demand curve because the original Marshallian analysis ignored wealth effects, by only looking at prices to determine quantity demanded (Poutvaara, 2007:1).

The Marshallian demand curve is derived from the indifference curve. In deriving the curve, the initial budget line is constructed using the assumption that the consumer purchases only two goods, x and y . The initial equilibrium point is attained, which is a point of tangency of the budget line and the indifference curve. This representation of the consumer's optimisation problem involves the maximisation of utility subject to a budget constraint, giving the results of demand as a function of price and income. The demand functions are homogeneous of degree zero in prices and income. This means demand will not change if all prices and income are doubled and the number of goods that can be afforded remains the same (Miller, 2003:19).

3.3.2.1.2 The Hicksian demand curve

The Hicksian demand curve by Hicks (1904-1989) is based on minimising expenditure subject to a target utility level (Voorneveld, 2010:31). Demand is given as a function of

price and utility. The expenditure minimisation problem is based on the question; if price equals p , what is the minimum amount the consumer would have to spend to achieve utility level (u)? The Hicksian demand curve shows the consumption bundle that achieves a target level of utility and yet minimises total expenditure. Implicit in the definition of the Hicksian demand curve is the idea that following a price change, one will be given enough wealth to maintain the same utility level before the price change. Thus, when the price of a good rises, the consumer is compensated for that price change (Miller, 2003:60).

The demand curve is constructed by varying prices and income so as to keep the consumer at a fixed level of utility, meaning that the income changes are arranged to compensate for the price changes (Tian, 2009:54). If utility value is fixed, varying the budget constraint will lead to the same choices being attained. The demand achieved is in terms of price and utility, and not income. The Hicksian demand functions are homogeneous of degree zero in prices, meaning that if all prices are doubled, the slope of the budget line does not change so does the cost-minimising choices (Miller, 2003:18). Hicksian (compensated) demand curves cannot have an upward slope since the substitution effect cannot be positive.

Utility maximisation requires expenditure minimisation, therefore the Marshallian and Hicksian demands are closely related. However, the following differences exist between the two curves:

- The Marshallian demand is derived by maximising a representative consumer's utility function subject to a budget constraint while the Hicksian demand, is derived by minimising the consumer's expenditure for achieving a given utility level (Oum *et al.*, 1992:141).
- For normal goods, the Hicksian demand curve is steeper than a Marshallian demand curve and vice versa for inferior goods. The reason being that for normal goods, Hicksian ignores the income effect. Change in quantity of demand for a certain price change will be smaller in terms of compensated demand. Marshallian includes both the income effect and substitution effect (Miller, 2003:24).

3.3.2.1.3 Slutsky demand curve

Slutsky (1915) cited in Chipman and Lenfant (2002:1) introduced the decomposition of income and substitution effect. Slutsky claimed that if, at the new prices, less income is needed to buy the original bundle then real income has increased, and if more income is needed to buy the original bundle then real income has decreased. This equation has been supported by (Varian, 2003:2; Varian, 1992:1) and can be summarised as:

$$\text{Slutsky equation: } \frac{\Delta Q_d}{\Delta P} \approx \frac{\Delta Q}{\Delta P} - Q \frac{\Delta Q}{\Delta P} \dots\dots\dots 3.3$$

Where:

$\frac{\Delta Q}{\Delta P}$ = the substitution effect shown by movements along the same demand curve

$Q \frac{\Delta Q}{\Delta P}$ = the income effect shown by a change in demand from the effective increase in income (Varian, 2003:2).

For normal goods, demand increases as income increases. The income and substitution effects reinforce each other when a normal good's own price changes. For inferior goods, demand is reduced by higher income, making the substitution and income effects act on opposite directions when an inferior good's own price changes. Slutsky discovered that a change in demand resulting from a price change always equal the sum of a pure substitution effect and an income effect (Menezes & Wang, 2005:546). The Slutsky approach of aggregate price effect decomposition can also be applied in the same way as the Hicks one (Sagi & Pataki, 2010:1).

3.3.3 Elasticity of demand

Elasticity of demand is the basis of this study. It measures the degree responsiveness of quantity demanded to changes in the price of a good, prices of other goods and the consumer income (Case & Fair, 1996:116). Some particular products are highly responsive to price, income and change in the prices of other goods compared to others.

3.3.3.1 Price elasticity of demand

The law of demand states that holding other factors constant, consumers will increase demand if the price falls, but is silent about the degree of responsiveness. It is always helpful to have an index indicative of how responsive quantity demanded is to price changes. The interpretation of elasticity in this study will be done according to the aspects highlighted by McConnell and Brue (1996:120) as follows:

- Elasticity is calculated using percentages and therefore the figure obtained is in relative form. The reasons being the choice of units where prices, measured in monetary terms and quantities, measured in units are used. Also for comparison purposes.
- The elasticity coefficient is used and the negative sign in the price elasticity of demand is ignored, only the absolute value is considered.
- Elasticity is interpreted as either being elastic, inelastic or unitary. Demand is elastic if a percentage change in the price of the product, income or prices of other products results in a larger percentage change in quantity demanded. On the other hand, with an inelastic demand, a percentage change in the price is accompanied by a relatively smaller change in quantity demanded. When the percentage change in price results in the same change in quantity demanded, demand is unitary elastic.

Elasticity can be measured at a point and between two points. Point elasticity is measured by the formula:

$$\varepsilon = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q} \dots\dots\dots 3.4$$

Where:

ε = elasticity at a point.

$\frac{\Delta Q}{\Delta P}$ = change in price divided by change in quantity.

$\frac{P}{Q}$ = Price divided by quantity (Mohr *et al.*, 2008:160).

Elasticity can also be measured between two points and this is called arc or midpoint elasticity because it calculates elasticity midway between the two points. The formula for the calculation of arc elasticity is given by:

$$\epsilon = \frac{(Q2 - Q1) \div (Q1 + Q2)}{(P2 - P1) \div (P1 + P2)} \dots\dots\dots 3.5$$

Where:

Q and P are quantities and prices at a point (Mohr *et al.*, 2008:160).

The reason for the varying types of elasticity can be explained by some of the determinants of the demand elasticity discussed below.

- Substitutability. Goods and services with close substitutes tend to have a highly elastic demand since people can switch to another brand that is perceived equally good (Smit *et al.*, 1996:149).
- Degree of complementarity. Complementary products are jointly used. High complementary goods tend to have low price elasticity (Mohr *et al.*, 2008:161).
- Price elasticity of demand depends on whether the good is a luxury or a necessity. Goods and services regarded as necessities have a relatively inelastic demand while luxuries have an elastic demand. Essential products are purchased even after price increases, which is not the case with luxury goods (Smit *et al.*, 1996:149).
- Time. When the price of a certain product changes, the initial response of the quantity demanded may not be significant since consumers take time to adjust to a price change. Demand is therefore more elastic in the long run than in the short run (Case & Fair, 1996:125).
- Proportion of income spent on a commodity. Goods and services that take up a very small proportion of a person's income would have a lower price elasticity of demand, whereas the demand for more expensive items would tend to be more elastic *ceteris paribus* (McConnell & Brue, 1996:125).
- Advertising. Advertising to some extent reduces the price elasticity of demand.

- Habit forming products. Goods that tend to be habitual, like cigarettes and alcoholic beverages, tend to have a relatively inelastic demand. People who consume these goods tend to continue with the same habits, even following price increases (Smit *et al.*, 1996:149).

In a linear demand curve, which has a constant slope, the price elasticity of demand varies along the curve. The upper part of the curve where prices are high, demand will be relatively elastic and quantity demanded is highly responsive to price changes whereas at low levels, demand will be relatively inelastic.

3.3.3.2 Income elasticity of demand

This predicts the percentage change in demand for a given percentage change in income. For most goods (normal goods) income elasticity will be positive because when income increases, the consumption of goods also increases. This positive income elasticity coefficient however varies with goods (Case & Fair, 1996:127). Within the category of normal goods, there is a distinction between necessities and luxuries. Necessities have an elasticity of demand between 0 and +1. As income rises, the demand of a necessity will rise, but at a slower rate. Luxury items have an elasticity of demand that is greater than +1. When income rises, the demand for luxury items often increases at a rate higher than the demand for necessities.

Income elasticity for inferior goods is negative. This is due to the fact that as consumer income increases, the purchases of a good considered inferior falls since a better good can now be afforded.

3.3.3.3 Cross elasticity of demand

According to Smit *et al.* (1996:150) this is the relative change in quantity demanded for a given item resulting from the relative change in price of another item, either a complement or substitute. If the price of a product goes up, quantity demanded of a complementary product falls. This depicts a negative cross elasticity of demand.

Substitute goods are used in the place of another. When the price of a good goes up, consumers shift to a close substitute, increasing its quantity demanded. Substitute

goods therefore have a positive cross elasticity of demand. Independent goods have a zero cross elasticity of demand.

3.4 CONSPICUOUS CONSUMPTION

According to Corneo and Jeanne (1997:54) the decision to consume in many circumstances, cannot be explained merely by the utility derived from consuming the good and the price of that product. Rather the rationale can be the symbol to others. Consumers can purchase a good in order to advertise their wealth or maintain a certain social status (Leibenstein, 1950:183). The consumer demand of a commodity can be based on its status and the norms in the economy where a consumer might believe that a high price is an indication of the good having a higher quality and therefore demand more after a price rise. Individuals consume highly conspicuous goods to advertise their wealth and social status. It is for this reason that Bagwell and Bernheim (1996:350) concluded that utility should be defined over consumption and status rather than consumption and price.

Leibenstein (1950:183) asserts that the desire of some consumers to be in style, attain exclusiveness and the phenomena of conspicuous consumption, should be incorporated more into the current theory of consumers demand. Despite the prevalence of social influences on consumer behaviour, and their widespread recognition in early economic thought, these influences are generally ignored from traditional micro-economic theory. The section below therefore gives an overview of the influences in the demand for goods which violates the law of demand.

Bandwagon effect: The bandwagon effect refers to a situation where the demand for a commodity is increased because others are also consuming the same commodity (Vigneron & Johnson, 1999:6). Consumers can desire to purchase a commodity in order to get into 'move with the rest' or conform with the people they wish to be associated with, which at times, contradicts the law of demand (Vigneron & Johnson, 1999:6). The assumption here is that there is knowledge about each individual consumption pattern. Consumers are therefore assumed to obtain accurate information (Leibenstein, 1950:190).

Snob effect: This is the bandwagon effect in reverse gear. In this situation the demand for a consumers' good is decreased owing to the fact that others are also consuming the same commodity (Vigneron & Johnson, 1999:56). This represents the desire of people to be exclusive, belong to a certain class, be different and to dissociate themselves from the common herd (Leibenstein, 1950:189). The assumption is that the quantity demanded by a consumer is a function of price and of the total market demand, but that the individual consumer's demand is negatively correlated to the total market demand (Leibenstein, 1950:199). This status-oriented behaviour is common occurrence in the consumption of expensive goods for public display. According to Vigneron and Johnson (1999:1) the snob purchase of goods is done because people want to be unique.

Veblen effect: The veblen effect refers to a situation where the demand for a consumer good is increased because it bears a higher price, therefore increasing the status of those consuming it (Smit *et al.*, 1996:112). The essential economic characteristic is that the utility derived from a unit of a commodity employed depends not only on the qualities of that unit, but also on the price paid for it. According to Bagwell and Bernheim (1996:350) the veblen effect is common in the market of luxury goods. The distinction between the snob and the veblen effect is that the former is a function of the consumption of others while the latter is a function of price (Leibenstein, 1950:189). In the case of the veblen effect, consumers will purchase less of a product when its price drops since the product will lose exclusivity.

3.5 COMMODITY THEOREMS

There are many commodities yet most commodity analysis can only examine few at any particular time. In a more realistic setting, empirical economists group the goods in broad categories such as food, clothing or shelter (Miller, 2003:81). One of the most challenging areas in economics is the aggregation of commodities. There actually exist two solutions to this: the composite commodity theorem (Hicks, 1936; Leontief, 1936) and the separability theorem (Leontief, 1947; Sono, 1961). However, according to Davis (2002:1) rejections of both are common practice.

3.5.1 Commodity groupings and separability

Attempts to reduce large number of goods to a relatively small and more manageable number have attracted, and continue to attract attention in the demand literature. The composite commodity theorem was developed by Hicks (1936) and states that if the price of a group of goods change in the same proportion, that group of goods behave as if they were a single commodity. This theorem is appealing for the following reasons according to Davis (2002:1):

- It imposes no restrictions on preferences.
- It allows prices to be highly but imperfectly collinear, a fact frequently observed.
- It can be tested without having to specify a parametric model.
- In contrast to other aggregation procedures, the early empirical evidence is very encouraging and supports the generalised composite commodity theorem (Davis, 2002:1).

Composite commodity theorem can be used in models of consumption over time since prices of goods in future periods will tend to move together. Application of the composite commodity theorem allows the analysis of consumption over time in terms of the composite commodities. This can be the consumption today compared with tomorrow. According to Browning and Browning (1992:51) the composite good theorem is usually applied when using the indifference curve theorem where goods can be grouped in only two groups.

Separability theorem was demonstrated by Irving Fisher and therefore known as the Fisher Separation Theorem. The theorem shows that the consumer's production decision and their consumption decision are separate (Miller, 2003:101). According to Bopape (2006:10) in the separability theorem commodities are grouped by making use of consumer preferences themselves.

3.6 WELFARE ECONOMICS

Welfare economics can be broadly defined as a branch of economics that uses microeconomic techniques to evaluate economic wellbeing within an economy and the

resulting income distribution associated with it. It analyses social welfare, measured, in terms of economic activities of the individuals that compose the theoretical society considered. Accordingly, individuals, with associated economic activities, are the basic units for aggregating to social welfare.

Consumer welfare refers to individual benefits derived from consumption of goods and services. When reduced to an individual level, the welfare of a single individual is based on an individual's own assessment of his/her satisfaction, given prices and income. Exact measurement of consumer welfare therefore requires information about individual preferences. According to Hassan (1995:9) the two most common forms of economic change are when a new good is invented or a current good ceases to exist and when there is a change in the relative price of a good.

In this study, only the narrow definition of welfare economics pertaining to consumer welfare is studied. Focus is placed on the three central measures of welfare in economics, consumer surplus, equivalent variation and the compensating variation.

Consumer surplus: This is an important tool for measuring changes in economic welfare. Case and Fair (1999:151) define consumer surplus as the difference between what an individual would be willing to pay for an object, at most, and what he/she actually pays. It is based on the Marshallian demand curve which provides a direct way of measuring consumer surplus. Consumer surplus is the area above the equilibrium point in the market to the top part of the demand curve. Although consumer surplus is the most common and simple measure of welfare, it is flawed since it is based on a linear demand function where income has no effect on the demand for the good. If the demand curve changes its shape, it becomes difficult to measure consumer surplus using the demand curve, also, if large income effect is involved.

Equivalent variation: This is the income needed to be taken away from or to be given to an individual make him equivalently worse off or better off following a price change (Zhao & Kling, 2004:2). This income should have the same effect as the price change. It therefore tells how much money should be taken away from the individual to have the

equivalent welfare effect as the price falls. In this case, the same utility is maintained even at the new price ratio.

In the case of a positive economic change, such as a fall in price, equivalent variation would be the change in income that would give the consumer the same additional utility that would happen due to this price fall. With a negative economic change, it would be the amount of income that would be taken away to lower the consumer's utility to the level that it would leaving the consumer at the same utility level (Bockstael & McConnell, 1980:57).

Compensating Variation: This constitutes the amount of income needed to compensate an individual following a price change so that the same level of utility is maintained. It is a measure of utility change introduced by Hicks (1939:697) and refers to the amount of additional money an agent would need in order to reach the initial utility after a change in price, change in product quality, or the introduction of new products. Compensating variation reflects new prices and the old utility level. According to Bockstael and McConnell (1980:57) the consumer will be free to buy any quantities of a new commodity at the new price.

These are the two monetary measures of the welfare effect of a price rise: the compensating variation and the equivalent variation, measuring price changes from different perspectives. The compensating variation measures welfare from the perspective of the new price and the equivalent variation from the perspective of the original price. Zhao and Kling (2004:2) concur that the intuition behind the breakdown of equivalent and compensated variation has to do with the measures themselves.

3.7 SUMMARY AND CONCLUSION

This chapter looked at the demand systems as well as consumer behaviour. Consumers make choices among alternative commodities, with the aim of maximising total satisfaction. Indifference curves also measure consumer behaviour. Normal indifference curves are downward sloping and concave to the origin and higher indifference curves are preferred since they yield a higher level of satisfaction.

A demand curve shows the relationship between price and quantity demanded, *Ceteris paribus*. Three types of demand curves were discussed namely the Marshallian demand curve, the Hicksian demand curve and the Slutsky demand curve. The Marshallian demand curve is sometimes called the uncompensated demand curve, the Hicksian demand curve sometimes called the compensated demand curve. The Slutsky demand curve introduces the decomposition of income and substitution effect.

Elasticity of demand measures the degree of responsiveness of quantity demanded to changes in the price of the same commodity, changes in the price of related products or changes in consumer income. A good can be elastic inelastic or unitary elastic. Luxury goods usually have a price elasticity coefficient which is greater than one while necessities have a price coefficient of less than one. Cross elasticity of demand measures elasticity for substitutes or complementary goods. Inferior goods have a negative income elasticity coefficient while normal goods have a positive income elasticity coefficient.

The demand behaviour that does not obey the law of demand, bandwagon effect, snob effect and the veblen effect was explained. Consumer welfare was explained by the consumer surplus, equivalent variation and compensated variation. In the next chapter, the theories of inflation are studied. Specifically, literature on price changes as defined by inflation will be studied. This will include the causes, types and effect on the economy and consumption. The effect on the price rises on the demand for certain commodities will be studied.

CHAPTER 4 INFLATION: A LITERATURE REVIEW

4.1 INTRODUCTION

A high inflation rate has been one of the basic challenges in economies since the introduction of money which preceded the barter trade system. Though the barter trade system did encounter inflation; it was less than that experienced in the monetary economies (Basu, 2011:5). There is an overall consensus that high rates of inflation are not desirable in any economy. Also, a branch of research exists that concentrates on the impacts of rising prices on economic growth (Feldstein, 1997:125; Faria & Carneiro, 2001:1; Olavarria-Gambi, 2003:1) while another is more concerned with the welfare costs of increasing prices which includes poverty and consumption (Sothearith & Sovannarith, 2008:1; Braun, 2008:1; Mendoza, 2010:1).

Continual rising prices generate an atmosphere of insecurity. It is generally agreed in economics that high rates of inflation have significant adverse consequences and that these adverse effects call for the sacrifices in employment and output that are needed to reduce inflation (Feldstein, 1997:1). Most governments today are concerned with fighting price instability, and most have made it a top priority in their monetary policy formulation. Hazlitt (1978:1) however notes that policy makers are promising to fight with their right hand the conditions brought by their left hand through wrong policy choices.

This chapter begins by giving a theoretical background of the rising prices (inflation) the latter discuss past research findings on rising prices. According to Makinen (2003:1) inflation is so commonly used to describe a rise in prices, and this section will adopt that. Focus will be put on definitions, causes, types, effects, costs of inflation on both the economy and on consumption together with the protective means. Lastly inflation trends in South Africa is studied.

4.2 DEFINING INFLATION

Inflation is understood as a sustainable rise in the general level of prices of goods and services over time (Haq & Hussain, 2008:1; Schiller, 2010:131). Although economists

may not agree on precise definitions, they describe the basic inflation problem as a situation where too much money chases few goods therefore causing the general price level to rise. Essentially, it is the general increase in the prices of goods and services over an extended period which consequently leads to a decline in the value of money and its purchasing power (Gerdesmeier, 2007:24).

This definition carries several implications. Firstly, inflation refers to the movement in the general level of prices. It does not refer to a rise in the price of one good or service; neither does it refer to a change in one price relative to other prices. These changes are common even when overall price levels are stable. Secondly, the rise in the price level must be somewhat substantial and continue over a period longer than a day, week, or month (Makinen, 2003:2). Therefore the need to distinguish inflation from a rise in the price of a specific good is imperative. Hazlitt (1964:2) defines inflation as a substantial rise of prices caused by an undue expansion in paper money or bank credit. Accordingly, the word inflation can be applied to the quantity of money in circulation. Makinen (2003:2) further refers to inflation as a situation where the volume of money is inflated, blown up or overextended. Inflation can also be defined as a fall in the value of money (Smith, 1984:2). The term inflation is also sometimes used to refer to a rise in the prices of some specific set of goods or services. This is sometimes referred to as the 'commodities inflation or core inflation.' It is measured as the percentage rate of change of a price index of those specific selected goods (Haq & Hussain, 2008:1).

According to Makinen (2003:2) the challenge in the characterisation of inflation is when there is increase in the price of a widely used commodity that influences the prices of other goods. Such commodities are important inputs into the production process as well as being a final product. The product may cause many other individual prices to rise. Different perceptions can exist to this phenomenon, making it hard to classify the scenario as inflation or a relative price change. Palmer (1971:5) further poses the following challenges in the definition of inflation.

- What is meant by sustained increases?

- How fast and over what period of time does the general level of prices have to be inflationary (Palmer, 1971:5)?

Furthermore, the word substantial cannot be defined precisely. Economies differ in priorities of economic goals, development norms and pricing policies. This allows the word substantial to have different meanings to different economies and hence lack of uniformity in defining inflation. Similarly, all of the major price indexes have a number of shortcomings such as failure to account for changes in the quality of the goods and services contained in the index (Lowe, 1995:2). The general price level, however defined, should be a statistical construct derived from certain selected specific prices. According to Palmer (1971:5) inflation is meant to imply that many prices are moving together over time due to subjection to some common pressure. In this case the general price level is the inverse of the value of money. A general guideline is usually used where an increase should be sufficient enough that it is unlikely simply to be a result of an upward bias in the relevant price index. The price increase should reflect a more general continual condition in the economy (Epetimehin & Fatoki, 2011:455).

4.3 CAUSES OF INFLATION

According to Hazlitt (1964:1) inflation should not be viewed as if there is no control over it like natural calamity. Accordingly, the truth of the matter is that political leaders have brought inflation through their economic policies (Gilpin, 2008:1). Authors concur that high rates of inflation are a direct effect of monetary and fiscal policy mismanagements (Mishkin, 1999:1; Aron & Meullbauer, 2008:1).

There are different schools of thought on the causes of inflation. The four common, monetarist, demand pull, cost push and the structuralist theory of causes of inflation are discussed below.

4.3.1 Monetary theory approach

Monetarists are the followers of Friedman (1948:252) who believed that only money matters. As such, monetary policy is a more potent instrument than fiscal policy in economic stabilisation. According to the monetarists, money supply is the dominating

factor in inflation determination. The earliest monetarist explanation was found in the quantity theory of money explained by the equation of exchange (Totonchi, 2011:1). In a steady economy, the growth rate of nominal money balances should equal the growth rate of prices (inflation) plus the growth rate of output. The quantity theory of money can be stated as follows:

$$MV = PY. \dots\dots\dots 4.1$$

Where:

M = quantity of money

V = constant of proportionality known as velocity of circulation

P = the general price level

Y = total output (Driscoll, 2001:15).

When the money supply increases, people will have more money to offer for goods, and without a corresponding increase in the supply of goods, prices will go up (Driscoll, 2001:15). Also, when people have more money, they value each unit less. In this case the rise in the prices of goods is not because those goods are scarcer than before, but because money is more abundant (Hazlitt, 1964:2). According to Haq and Hussain (2008:6) the risky increase in money supply occurs when governments finance spending in a crisis, such as a civil war, by printing money excessively, often leading to hyperinflation, a condition where prices can double in a very short period.

Inflation caused by high rates of growth of the money supply is often a deliberate policy stance by central bank (Huber & Robertson, 2000:14). There is divergence on the notion that central banks control the money supply in that money supply adapts to the demand for bank credit issued by commercial banks. This endogenous money supply increases the money volume independent of the central bank's policy. Holden and Howell (2009:10) concur with this argument by adding that it is quite likely that central banks influence the money supply by making money cheaper or more expensive, and thus increasing or decreasing its production.

Parkin *et al.* (2010:622) consent that in the long run inflation is a monetary phenomenon which occurs when the quantity of money supply grows faster than the Gross Domestic Product (GDP). GDP is the total output produced within the country's geographical boundary. Conversely the modern quantity theory led by Friedman (1956:3) holds that inflation is always a monetary phenomenon that arises from a more rapid expansion in the quantity of money than in total output.

4.3.2 Demand pull theory approach

Keynes (1937:1) and his followers emphasised the increase in aggregate demand as the source of demand-pull inflation (Totonchi, 2011:1). When the value of aggregate demand exceeds the value of aggregate supply at the full employment level, the inflationary gap rises. The extreme pressure on the demand side of the economy, where consumers demand more than the economy can provide at full capacity, leads to a demand-driven rise in the price level (Kibritcioglu, 2002:45-46). Therefore, the larger the gap between aggregate demand and aggregate supply, the more rapid inflation becomes.

The components of aggregate demand that are likely to lead to inflation according to Parkin *et al.* (2010:622) are:

- Increase in consumption expenditure.
- Increase in government spending.
- Increase in investment.
- Reduction in direct or indirect taxation.
- Increase in exports (Parkin *et al.*, 2010:622).

The inclusion of exports as a determinant of inflation brings about the international world influence in the domestic inflation rate. Inflation arising due to factors emanating from outside the country is called imported inflation. It can be the result of faster economic growth in the trading partners in relation to the domestic economy which can lead to a large depreciation of the local currency (Papaioannou & Yi, 2002:1).

According to the demand-pull inflation theory, policy that causes decrease in each component of total demand is effective in reducing demand pressure and therefore inflation. One such policy can be a fall in government expenditure or tax increase (Totonchi, 2011:2). Contrary to monetarists, Keynesian economists emphasise the role of aggregate demand in the economy rather than the money supply in determining inflation (Haq & Hussian, 2008:6-7).

On the positive side, demand inflation is constructive to a faster rate of economic growth since the excess demand and favourable market conditions will stimulate investment and expansion. This is a boom phase of the economic cycle accompanied by an inelastic short run average supply (Cheng, 2003:57). The strong demand pull-inflation is usually driven by sustainable economic growth, healthy consumers' confidence, cut in interest rates and strong liquidity (Haq & Hussain, 2008:6; Sharma & Sharma, 2007:8).

4.3.3 Cost-push inflation

Cost-push inflation is caused by an increase in the cost of production (Parkin *et al.*, 2010:625). Accordingly high cost of production has serious implications on the output. In the short run, supply will fall, causing a rise in prices. Cost-push inflation is usually enforced by labour union activities demanding wage increases, as well as profit motives by employers (Ahortor, 2010:1). A rapid rise in money wages compared to labour productivity causes inflation. Pressure from labour unions to grant a wage increase raises the cost of production and employers respond by raising the prices of their products. While higher wages enable workers to buy as much as before, in spite of higher prices, the increase in prices induces unions to demand still higher wages. In this way, the result is the wage-cost spiral, leading to cost-push or wage-push inflation (Totonchi, 2011:2).

Some sectors of the economy may be affected by increases in money wages prompting the prices of their products to rise. In cases where these products are used as inputs for the production of commodities in other sectors, the result would be a rise in the cost of production in those sectors and an upward push of the prices of their products. Thus

wage-push inflation in a few sectors of the economy may lead to inflationary rise in prices in the entire economy (Ahortor, 2010:1).

Another cause of cost-push inflation is profit-push inflation in imperfectly competitive firms (Javed *et al.*, 2010:309). An imperfectly competitive firm has the profit motive in mind, and therefore raises the price of its product to offset the rise in the cost of production. Such firms are able to administer price of their products. According to (Totonchi, 2011:2) this can be referred to as profit-push inflation, administered-price inflation or price-push inflation. Inflation pressure can also originate exogenously where the variable causing inflation is not within the model being studied. This can be through any of the following according to Kandil and Morsy (2011:143):

- Increase in the price of imported raw materials.
- External shocks (i.e. commodity price fluctuations).
- Depreciation in the exchange rate (higher import costs).
- Natural disasters like hurricanes and floods (Kandil & Morsy, 2011:143).

Exogenous causes of inflation are difficult to eliminate through domestic economic policies because they do not originate from the domestic economy.

4.3.4 Structural inflation theory

Chang and Hou (2007:5) define structural inflation as general increase of prices triggered by an economic transition like some structural adjustment processes. An economy can attempt to move from a rigid central planning to a form of free economy. The overall view denoted by structuralists is that inflation should be attributed to non-monetary factors like social and political influences. Reliance on monetary factors is therefore unjustified (Olivera, 1964:1).

Structuralists concur that the political factors which negatively publicise the economy in the world market are the main causes of inflation. Political unrest can reduce the value of the currency and increases currency uncertainty. These structural changes may include social economic and political transformations. Zwizwai (2007:21) argues that these have been the main causes of inflation in developing nations. One important

argument of the structuralist school is that the roots of inflation can be found in bottlenecks of inelastic supply (Behrman & Hanson, 1979:227; Okoha & Nyong, 1997:1). This is inflation that has its origins in the structural deficiencies of the economic system which impede the adjustments of supply to demand. To structuralists, the increase in money supply is only a permissive factor or symptom of structural rigidity allowing inflation spiral to manifest rather than a cause of inflation.

Based on the above schools of thought, a conclusion can be drawn that the causes of inflation are diverse and depend on the type of economic thought. Determining the causes only is not sufficient, inflation has to be measured. The section below gives a theoretical perspective of measuring inflation.

4.4 MEASURING INFLATION

Measuring inflation requires finding objective ways of extrication the changes in nominal prices from real activities. The logic is that if the price of a commodity changes over the course of a year, with no change in quality, then this price change represents an inflation index. The common problem in the construction of such an index is the decision as to which items should enter in the base year, and with what weight and quantities (Moreno, 2009:16). Another problem with these indices is that they can incur a significant increase because of developments affecting supply in a single sector (Palmer, 1971:15).

Inflation is measured by the price index. According to Dohn *et al.* (2008:15) a price index compares the prices of a set of products at different points in time, or at different locations. The index measures price changes rather than price levels. It shows how much to be paid for a set of products at some point in time relative to what would have been paid for the same set of products at another point in time (Moon *et al.*, 2010:1). A change in the expenditure for a set of goods or services results from changes in the prices, quantities, qualities or the kinds of goods and services purchased

The consumer basket is considered when constructing the price index. Instead of looking at the change in price of one good, the price of a large basket of goods and services is considered. The weights in the index represent the fraction of spending that

typical consumers spend on each type of goods (Bunn & Ellis, 2011:12). This basket usually becomes less representative over time due to consumer dynamics. Consumers increasingly substitute more expensive goods for cheaper ones. At times consumers buy less of a commodity whose price has risen and increase the consumption of a cheap good. Therefore, if the weights are not adjusted, the change in the index may overestimate the true price increases (Gerdesmeier, 2007:26).

Changes in quality are sometimes difficult to incorporate into the price index. If the quality of a product improves over time and the price also rises, some of the changes in prices can be due to the improved quality. Price increases due to quality changes cannot be considered as giving rise to inflation since they do not reduce the purchasing power of money (Lowe, 2001:143). To account for the problems faced in measuring inflation; the measures are often modified over time, either for the relative weight of goods in the basket, or the way in which present goods are compared with past goods. This includes adjustments and reweighting. The calculation of inflation involves taking the average price of all output (average price level) and then comparing the changes overtime (Haq & Hussian, 2008:2). The fundamental purpose of measuring the general price levels (inflation) is to know how the overall cost of living changes over periods of time

There are many forms of different price indices (measures of inflation) relating to different sectors of the economy. The characteristics of these indices have implications on the inflation rate. It is therefore important to properly calculate the index to be used since the guesstimated figure of the overall inflationary pressure is the one used for overall policy making. Schiller (2010:138) justifies the measurement of inflation for two purposes, to estimate the average rate of inflation and to identify its principal victims. The following sections discuss various indices which are used as measures of price and inflation.

4.4.1 Consumer price index (CPI)

The CPI measures the current cost of buying a bundle of goods (the market basket) compared to cost of the same bundle of goods in the past. This is the most significantly

used measure of general price level and the calculation of the rate of inflation in South Africa. The CPI can be defined as an index of changes in the average price of consumer goods and services (Schiller, 2010:138). Inflation rate, in this case is the annual percentage rate of increase in the average price level. It does not refer to the rise in the price of any particular good or service but to all consumer goods. The justification for the use of this index is that it utilises a market basket composed only of those goods and services for final consumers (Blomberg & Harris, 1995:21). The basic idea of index calculation and the formulae is to know how much a representative basket of goods in a certain period differs from the total price of the same basket in another period.

4.4.1.1 Constructing the CPI

The following describes the procedure for constructing the CPI according to Dohn *et al.*, (2008:16) and Schiller (2010:139):

- Identify the market basket of goods and services that are typical for the consumer to purchase, sometimes known as the consumer basket. The basket must be representative of the goods and services acquired or consumed.
- Decide on the base year. The base year is the year used for comparative analysis and forms the basis of indexing.
- Decide on the item weight. This is the percentage of total expenditure spent on a specific product. This reflects the relative importance of a product in the customer's budget. The relative importance of an item, the weight in consumer budget, is a key determinant of its inflationary impact.
- Construct a formula for the calculation of CPI.
- Collect prices on a monthly basis to track changes in prices (Dohn *et al.*, 2008:16; Schiller, 2010:139).

After the CPI has been determined, inflation is then calculated using the formula:

$$\text{Inflation rate} = [\text{CPI}_x - \text{CPI}_{x-1}] / \text{CPI}_{x-1} \times 100\% : \dots\dots\dots 4.2$$

Where:

CPI_x = consumer price index for the year in question

CPI_{x-1} = consumer price index for the previous year.

The widespread use of the CPI as the major price indicator reflects its perceived advantages. The CPI is relatively easy to understand and therefore the best available measure of the cost of living faced by consumers. The CPI is available frequently (typically monthly) and is not subject to many revisions, which enhances its transparency to the public and its usefulness for purposes of monetary policy (Moreno, 2009:16).

4.4.1.2 Critiques of the CPI

Although there are several advantages of using the CPI, it also has been criticised for the following reasons:

Firstly, it is not based on the market basket of goods bought by all consumers, but only by urban wage earners. This index can thus differ significantly from one constructed for other consumer groups. There are technical problems associated with the sampling and representativeness of the price data (Palmer, 1971:15).

Secondly, substitution bias arises because the CPI holds weights fixed at base period quantities. This puts too much weight on the relatively more expensive items from which consumers have shifted away (Broda & Weinstein, 2007:5).

Thirdly, the CPI has an upward bias build into it. It does not fully reflect the quality improvements which are constantly taking place (Palmer, 1971:15). Some economies do adjust the CPI for product quality but according to Schiller (2010:142) such adjustments entail subjective judgments where critics complain that the CPI overstates inflation because quality improvements are undervalued.

Lastly, new higher quality products are constantly replacing older products and this process is mostly ignored by statistical offices. In the actual fact, new items are not added to, nor old items subtracted from (Broda & Weinstein, 2007:5).

Nevertheless, CPI plays a vital role in collective bargaining, particularly during the periods of rising prices (Haq & Hussain, 2008:1). It guides the monetary policies, helps in wage settings and social protection (Dohn *et al.*, 2008:23).

4.4.2 Laspeyres price index

The Laspeyres index measures the price development of the basket consumed in the base period. This index is known as a base-weighted or fixed-weighted index because the price increases are weighted by the quantities in the base period. Literature exists that indicates that the CPI is an example of a Laspeyres (Broda & Weinstein, 2006:3; Broda & Weinstein, 2007:8; Subervie, 2007:1). However, according to Hill (2010:1) a true Laspeyres price index is one in which the quantities that make up the basket are the actual quantities in the reference period. Therefore, the CPIs are not Laspeyres indices since the expenditures and quantities used as weights typically come from household budget surveys undertaken some years before the price reference period for the CPI.

The Laspeyres index answers the question of how much a basket that consumers bought in the base period would cost in the current period (Hill, 2006:1). The calculation does not differ much from the CPI. In theory, this index cannot determine how much of a total price increase is due to an increase in quality, changes in size, and how much is due to inflation. It keeps quality constant and its greatest strength, constant quality, contributes to its greatest weakness - a bias towards over-stating inflation.

4.4.3 Paasche price index

Paasche index was developed by Paasche (1874) for measuring current price or quantity levels relative to those of a selected base period. Contrary to the Laspeyres price index, the question answered is how much a basket that consumers buy in the current period would have cost in the base period (Dohn *et al.*, 2008:18). It is also defined as a fixed weight, or fixed-basket index. It uses the basket of goods and services and their weights from the current period.

Since the current year is the base year, the quality of goods or service defined is not held constant but is calculated at each time period. The Paasche price index tends to understate price increases, since it already reflects some of the changes in consumption patterns that occur when consumers respond to price increases. Increased consumption of goods will indicate reduced relative prices. Economists assume that the Paasche index for inflation will always be less than the Laspeyres index (Diewest, 1998:48). The main reason for this is that commodity shares are likely to change in a systematic way, thus rising for goods whose prices have increased the least and falling for goods whose prices have increased the most. This happens to the extent that consumers are willing to substitute goods that have gone up in price the most by goods that have gone up in price the least, including those whose prices have actually gone down (Ulimwengu *et al.*, 2009:9).

4.4.4 Fisher price index

The Fischer index is the geometric average of the Laspeyres and Paasche indexes (that is, the square root of their product) (Diewest, 1998:48). It is the price index which uses both the baskets from the base and the current periods and therefore can be defined as the geometric average of the Laspeyres price index and the Paasche price index (Dohn *et al.*, 2008:18). The geometric average is calculated by multiplying the Laspeyres index by the Paasche index and then taking the square root of the result. The biases associated with each component index are minimised by calculating the geometric average. The formula for calculating the Fisher index is as follows:

$$F_{t,t-1} = (L_{t,t-1} \times P_{t,t-1})^{1/2} \dots\dots\dots 4.3$$

Where:

$L_{t,t-1}$ = the Laspeyres price index

$P_{t,t-1}$ = the Paasche price index

Source: McCully *et al.* (2007:28)

According to Lum (2004:31) weaknesses of this index is that it cannot be used to precisely determine how much of a total price change is associated with inflation and

how much is attributed to changing quality since there is no fixed quality associated with the base year. A further weakness of this index is its complexity since it relies on the production of the two component indexes, the Laspeyres and the Paasche indexes, weakness in either affects the inflation rate.

4.4.5 Producer price index (PPI)

The PPI measure the prices received by producers. This index differs from the CPI in that price subsidisation, profits, and taxes may cause the amount received by the producer to differ from what the consumer pay (Weinhagen *et al.*, 2010:11). The two can therefore not give the same results. According to Schiller (2010:140) there are three PPIs. One covers raw materials, the other intermediate goods and the last finished goods. The three PPIs do not include all producer prices but focus primarily in mining, agriculture and manufacturing.

Producer price inflation measures the pressure put on producers by the costs of their raw materials. This cost, however can be avoided if it is passed on to consumers as consumer inflation, absorbed by profits or offset by increasing productivity (Haq & Hussain, 2008:1; Robinson, 2007:8). The PPI is alternatively called an output index since it measures price changes from the manufacturers and the price of output. The inflation index given by the PPI therefore only reflects general price movements on the producers' side. Dohn *et al.* (2008:23) distinguish the domestic from the non-domestic PPI. The domestic PPI measures the average price development of all goods resulting from an economic activity and sold on the domestic market. On the other hand, non-domestic PPI shows the average price development, converted to local currency of all goods resulting from an economic activity and sold outside the domestic market.

The PPI has been used in several sectors of the economy as an economic indicator since it captures price movements prior to the retail level (Goldberg & Hellerstein, 2011:5). The index is commonly used in the purchase and sales contracts. These contracts normally specify amounts of money to be paid at some point in the future. The escalation clause that takes account of increases in input prices is always used and is in line with the PPI (Dohn *et al.*, 2008:34).

4.4.6 GDP deflator

A GDP deflator is a price index that refers to all goods and services included in the GDP. This deflator can be defined as the ratio of the estimate at current prices to constant prices (Patnaik *et al.*, 2011:13). According to Schiller (2010:140) this is the broadest price index covering all inputs including consumer goods, investment goods and the government sector. Unlike CPI and PPI, the deflator is not based on a certain basket but adjusts nominal GDP into real GDP. Nominal GDP is the value of final output produced in a given period measured in current prices while real GDP is the value of final goods and services in a given period adjusted for price changes. The real GDP is therefore calculated as:

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{GDP deflator}} \times 100 \dots\dots\dots 4.4$$

4.4.7 Implicit price index (IPI)

The implicit price index attempts to measure the general price level of all goods and services produced in the economy during a specified period (Nordhaus, 1998:2). It is an aggregated price index which is affected by changing expenditure patterns each year since it represents the ratio between current Gross National Product (GNP) and constant GNP. Gross National Product refers to the total output produced by the resources of a country irregardless of the country of location (Schepelmann *et al.*, 2010:14). Price series for components of the CPI and Wholesale Price Index are included in the deflation of the GNP in order to arrive at the IPI.

The IPI has limitations as a measure of inflation. Since it involves shifting quantity weights in the base year, changes in its value might be reflecting changes in GNP composition. Many goods produced by the government have no close counterpart in the public sector so that it is difficult to know what price to impute in them. Also, no attempt is made to adjust for labour productivity increases (Palmer, 1971:17).

The choice of the index formula often depends on the availability of data. Contrary to the other formulas, the Laspeyres index measures the basket consumed in the base period. In common practice, the Laspeyres formula is usually preferred for the

calculation of consumer price indices, which are typically compiled and released rapidly before consumption or production information for the current period could have been collected. Common observation is that the Laspeyres index has the tendency to overstate inflation and the Paasche index tends to understate inflation.

4.5 INFLATION EXPECTATIONS

Inflation expectations refer to the rate of inflation that workers, businesses and investors think will prevail in the future, with a potential to affect their decision-making. The significance of inflation expectations is that they influence the behaviour of economic agents in terms of consumption, savings and investment decisions. Money supply can increase due to an increase in people's expectations concerning inflation. Holding other factors constant, an increase in inflation expectation leads to an increase in the general price level (Palmer, 1971:12). Moreover, these expectations provide a predictor of future inflation and important information for monetary policy decisions. The inflation expectations of different groups of economic agents indicate the credibility of inflation targets, and whether these targets seem to be attainable or not (Lyziak, 2003:7).

Depending on their nature, inflation expectations play a significant role in price formation. Changes in inflation expectations may lead to changes in aggregate demand, which may then influence prices. Regarding cost-push effects, an increase in the expected rate of inflation may cause employees to demand higher wage settlements. Also companies anticipating higher costs in the future may see incentives to increase prices. Even if prices are not adjusted immediately, companies may temporarily increase the prices of their products. Lyziak (2003:7) concludes that in this way, a rise in inflation expectations may generate an increase in prices. However, in standard macroeconomic theory, inflation expectations hypothesis implies that long run inflation expectations do not change over time in response to the arrival of new information (Galati *et al.*, 2009:1).

It is not surprising that empirical literature exists, seeking to both estimate and examine the empirical properties of inflation expectations (Forsel, & Kenny, 2002:8). Both the academic literature and policy discussions have highlighted the crucial importance of

inflation expectations. However, according to Galati *et al.* (2011:1) evidence on the process through which agents form expectations is hard to obtain.

Three kinds of inflation expectations, the rational expectation, the adaptive expectations and the static expectations are discussed below:

4.5.1 Rational expectations

Rational expectations theory indicates that economic players look rationally into the future when trying to maximise their welfare, and do not respond solely to immediate opportunity costs and pressures (Testatsion, 2011:1). This view believes that future expectations and strategies are important for inflation as well. The rational expectations hypothesis implies that long-term inflation expectations do not change in response to the arrival of new information. Models with rational expectations assume homogeneous expectations, given the conceptual and technical difficulties of dealing with rational expectations models under heterogeneous information (Galati *et al.*, 2009:2).

Rational inflation expectation assumes inflation to be what it will be. A core assertion of rational expectations theory is that actors will seek to go forward central-bank decisions by acting in ways that fulfill predictions of higher inflation. This means that Central Banks must establish their credibility in fighting inflation (Haq & Hussian, 2008:7). An alternative formulation is that rational expectations are model-consistent expectations, in that the agents inside the model assume that the model's predictions are valid.

4.5.2 Adaptive expectations

Adaptive expectations are inflation expectations that are based on what inflation has recently been in the past; thus the backward-looking behaviour. With adaptive expectations, people form their inflation expectations based on history. This type of expectation is often linked to the price/wage spiral because it involves workers trying to keep their wages up with prices and employers passing higher costs on to consumers in the form of prices. This becomes a vicious circle. According to Haq and Hussian (2008:6) this type of inflation reflects events in the past as hangover inflation.

4.5.3 Static expectations

Static expectations arise when inflation expectations are well-anchored and do not change. Under static expectations, people assume that inflation will be low, irrelevant, and negligible and do not change their habits. If inflation expectations are static, people do not think about inflation at all and expected inflation never changes (Delong, 2006:11).

4.6 EFFECTS OF INFLATION

High inflation rates are usually associated with the deterioration of the value of money and a fall in the consumer buying power. Economic agents therefore prefer low and stable inflation rates since the rise in the prices of goods and services can influence their decisions (Boyd *et al.*, 2000:1). The effects of inflation are closely related to its magnitude, its uncertainty and whether it is anticipated or not. Inflation is also linked to the degree to which the tax systems are indexed. These effects are itemised and discussed in the following sub-sections.

4.6.1 Loss of purchasing power

High inflation rates diminish the purchasing power of individuals resulting in the reduced quantity of goods that can be purchased with a given amount of money. This purchasing power erosion in the low income households tends to undermine poverty reduction schemes and investments achieved over long periods (Kuteesa *et al.*, 2006:3). Due to this, most households considered poor before the price increases may fall on the verge of hunger and malnutrition, and those barely above the poverty line falter and slip back into poverty. In this context, it is important to examine the impact of purchasing power loss on poverty (ADB 2011:13).

4.6.2 Effect on investment

There is a wide argument as to whether inflation dampens or speeds investment. The first school of thought believes that inflation hinders the investment motive and that there is a long term negative relationship between the two (Gillman & Kejak, 2005:1). According to Acemoglu *et al.* (2003:1) high inflation rates tend to dampen the motive to

invest by raising the return on capital. Future demand falls, negatively impacting investment. The negative relationship between inflation and growth in investment is key argument in macroeconomic policy. The other school of thought suggests that inflation can provide an incentive for those with savings to invest them, rather than have the purchasing power of those savings eroded (Haq & Hussian, 2008:3). Under rational situations, investors intend to seek for those returns that will stay ahead of expected inflation. According to Atesoglu (2005:19) inflation does not reduce investment but however, lowering inflation may lead to a small reduction in the real investment.

4.6.3 Income redistribution

The general notion that inflation hurts everyone does not hold, instead inflation makes other people better off by its income redistribution mechanism (Yue, 2011:15-16). Redistribution does not necessarily result in the general decline in economic welfare. Income is redistributed because people buy different combination of goods and services, own different assets and sell distinct commodities (Doepke & Schneider, 2006:1071). The winners and losers during inflation are therefore selected on the basis of the assets they hold. If the prices rise more than the interest to be earned, inflation will reduce the real value of savings. Inflation also acts like tax, taking income or wealth from one group of people and giving to another. In this case, inflation taxes the poor, who hold a larger fraction of their wealth in money, more heavily than the rich who hold both capital and money. Consequently, inflation is claimed to increase income inequality and poverty in this sense (Yue, 2011:15-16).

Even if prices rise at the same rate, inflation would still redistribute income. This is because people with fixed incomes during inflation would experience declining real income. The fixed income earners include pensioners and workers with multi-year contracts and lenders at a fixed interest (Shahbaz *et al.*, 2011:5). Suppliers benefit when the prices of their products rise faster than the average prices and real income rises (Schiller, 2010:134).

Palmer (1971:47) provides three basic analytical propositions concerning the redistribution of real purchasing power by inflation:

- Income is distributed from those whose earnings rise less rapidly relative to the prices they pay to those whose incomes rise more rapidly relative to the prices they pay.
- Income moves from those whose assets rise more slowly in price as a result of inflation to those whose assets rise more rapidly than prices.
- Income is distributed from creditors to debtors when debts are stated in fixed terms. Debtors benefit due to reduction of the real value of debt burden (Palmer, 1971:47).

Labour market changes can cause income redistribution, particularly to low income groups (Feldstein, 1997:1). An inflation induced lag of wages behind prices is the source of redistribution bias against those whose income lags behind (Adema, 2010:2). Moreover, interest and rent incomes are possible sources of redistribution bias against the non-poor since they often tend to lag prices.

There is controversy over the redistribution effect of inflation pertaining to the cost to the economy and the cost to specific individuals. Makinen (2003:4) notes that the costs to individuals may not impose a burden on the economy because they are in the nature of a redistribution of either income and/or wealth such that one part losses when the other gains. Therefore the net results to the economy will be nil.

4.6.4 Price effect of inflation

The link between inflation and price dispersion has been the focus of an extensive theoretical and empirical literature. Largely, inflation is seen as contributing to the distortionary effects on the price system (Caglayan *et al.*, 2006:1). A change in the general rate of inflation should, in equilibrium, cause an equal change in the rate of inflation for each commodity price, if distortion does not occur (Feldstein, 1997:1). The effect of price increase in the economic welfare is also reflected in the distinction between nominal and real income. Nominal money is measured in current terms while real income is measured in terms of the quantity of goods and services that can be purchased. According to Schiller (2010:133) prices rise at different rates during inflation hence the average price increase is not representative of any particular good or service. In reality some prices rise rapidly, others slowly and some actually fall. Not everyone

suffers equally during inflation. People who consume goods and services whose prices rise faster bear the greater burden of inflation (Schiller, 2010:133).

4.6.5 International trade

Generally, inflation reflects changes in the level and distribution of real income within an economy and across national boundaries. This is the broad sense of viewing inflation which reflects the economic contradictions not only within individual countries, but on the world scale as well. Furthermore, the rise in economic discrepancies and the frequent lack of adequate solutions lead to increasing political contradictions (Kolodko, 1987:1). Inflation also tends to affect currency exchange rates and international balance of payments account. In an economy with a fixed exchange rate system, the exports of the rapidly-inflating economy would tend to fall, and their imports would tend to rise (Houck, 1997:57). This is because trading partners will be less willing to trade with an uncertain currency. Therefore rigidities in the exchange rate regime in a country experiencing inflation tend to worsen its trade relations.

The implications of inflation in the international situation are of considerable importance to policy makers. Domestic inflation raises the prices of goods and services relative to those of other economies (Ortiz *et al.*, 2011:6). The result is often a worsened balance of payment deficit. In an economy where fixed exchange rates are imposed, higher inflation than in trading partners' economies makes exports more expensive and weakens the balance of trade (Guisinger & Singer, 2010:315-316).

4.6.6 Hoarding

During inflation, the prices of goods and services are likely to rise over time prompting both consumers and businesses to make purchases sooner rather than later. Consumers buy durables to store wealth as means of getting rid of excess cash before it is devalued, creating shortages of the hoarded goods (Gilpin, 2008:1). This effect keeps the economy active in the short term by encouraging spending and borrowing. In this case, inflation would be seen as reducing incentives to save (Haq & Hussian, 2008:3-4).

Hoarding is initiated by speculative activities. The objective of speculation, however, is to profit from future differences in the prices of assets. An individual can hoard a commodity for a couple of weeks because he expects that the price will be higher, this is speculation. No real, additional value is created; there is merely speculation on a higher price. If a large number of consumers do this simultaneously, the price of the good in question increases because the hoarding causes supply shortages (Wahl, 2009:9). It should be noted however that hoarding is an illegal activity.

4.6.7 Encourages rent seeking

Rent-seeking is an attempt to obtain economic rent by manipulating the social or political environment in which economic activities occur, rather than by creating new wealth (Felkins, 1996:1). Economic rent is defined as payment for goods and services beyond the amount needed to keep the required factors of production at work and sustain supply (Mack, 1992:174). Economic agents may use their resources to obtain an economic gain from consumers without reciprocating any benefits back to the society through wealth creation. This happens when a company tries to gauge and combat the costs of inflation by the use of nominal money instead of real money to gauge changes in income and wealth. People suffering from 'money illusion' usually complain of rising prices even if their income are kept at pace with the rising prices. Money illusion is the failure to perceive that the unit of money expands or shrinks in value (Brunnermeier & Julliard, 2007:6) and makes people confuse nominal with real magnitudes (Miao & Xie, 2007:1).

4.6.8 Macroeconomic effects

Inflation is one of the key concerns to policy makers because its effects typically demands monetary policy response. The monetary policy response is initiated by the stymie economic activities and the threatened employment-generation brought by inflation (Ortiz *et al.*, 2011:13). Uncertainty is one of the most immediate consequences of inflation. Changes in price levels, in whatever direction make economic decisions difficult both in the short and in the long run. Long term production decisions take time to be accomplished and if prices change rapidly there will be uncertainty as to whether

the decision should be taken or not. The economy is therefore deprived of new investments and expanded production possibilities, leading to more uncertainty about the future rate of inflation. The effectiveness of the price mechanism in allocating resources efficiently is severely distorted, and thus creates economic inefficiency and a lower growth rate (Fountas & Karanasos, 2007:230).

Inflation can result in a bracket creep (a process by which inflation pushes wages and salaries into higher tax brackets) because many progressive tax systems are usually not adjusted for inflation. As wages and salaries rise in nominal terms under the influence of inflation they become more highly taxed, even though there is no increase in real terms. The net effect is that in actual fact the taxes rise more than real income unless the tax rates or brackets are adjusted to compensate for inflation (Wallace & Alm, 2004:7).

4.6.9 Other effects

The costs of inflation are numerous and diverse in nature. According to Driscoll (2001:20-21) the other effects of inflation are as below:

- Shoe leather costs: people have to go to the bank more frequently, hence wear out their shoes.
- Menu costs: costs of changing prices; a firm has to print catalogues more often if prices constantly change.
- Liquidity effect: High inflation means high nominal interest rates, which means that payments made in nominal terms on debt will be high. If for some reasons the amount to be borrowed is limited in nominal terms, high inflation will limit borrowing (Driscoll, 2001:20-21).

The effects of inflation have been discussed and the negative impact of inflation in the economy highlighted. There is therefore need to device the means to protect the vulnerable and the affected.

4.7 PROTECTIVE MECHANISMS

The effects of inflation are impact more negative in the economy. Economic and market participants would not want to suffer from the inflation effects. The subsection below

begins by a discussion of protective mechanism at a national and then moves on to the mechanisms that can be applied at household level.

4.7.1 Use of real interest rates

According to Schiller (2010:144) investors can protect themselves by indexing their interest. This is an automatic adjustment of nominal interest to the rate of inflation by the use of real interest rates. Real interest rate is calculated as nominal interest rate less anticipated rate of inflation and this protects creditors during the period of rising prices. Real interest can be used in liquid assets like bonds and securities. The yield on inflation-indexed securities represents the real return to the investors. Indexed securities offer the investors with protection against unanticipated changes in inflation, while a nominal security does not (Malvaez, 2005:4).

4.7.2 Price control

This is the setting and controlling of prices of certain goods and services in the economy. There are broadly two kinds of price fixing; first is the selective price control by which the government attempts to hold down prices of a few necessities. Secondly the overall price setting where prices of all goods and services are controlled. Hazlitt (1964:12-14) argues that price control may be the worst form of remedies for inflation especially if it involves wage fixing and further suggests the following challenges:

- If more money is put into circulation, while prices are held down, most people will be left with unused cash balances seeking goods and profit margins will fall. Selective price fixing brings a shortage of those goods whose production the government is most eager to encourage.
- Price fixing creates powerful habits in the minds of the people and would want it prolonged or tend to make it permanent. Price control is the major step toward a fully planned economy. It causes people to regard it as a matter that the government should intervene in every economic transaction.
- Price control diverts attention away from the only real cause of inflation - the increase in the quantity of money and credit, hence it prolongs and intensifies the very inflation it was ostensibly designed to cure (Hazlitt, 1964:12-14).

Some countries adopted specific measures to control prices. The control of these prices is not an easy task since factors that trigger this price rise may be complicated especially if they emanate from outside the economy. Mousseau (2010:9) suggests that the government can, where possible, negotiate with the private sector to prevent price hikes rather than fix prices.

4.7.3 Tariff reduction

According to the Food and Agriculture Organization (cited in Mousseau, 2010:8) the reduction of import tariffs and taxes are the most used measures to respond to rising prices. This is a relatively easy and quick response to ease consumers' access to commodities by making them easily accessible outside the borders. The other key response can be the subsidisation of key commodities such as fuel and food (Bacon & Kojima, 2006:3).

4.7.4 Enlarging the safety nets

There is no universally accepted definition of safety nets. According to Gentilini and Omamo (2009:6) safety nets are a subset of broader social protection systems. The definition of social safety nets usually concentrates on publicly financed safety nets funded by national or local government rather than informal transfers between households and private agencies. Safety nets may include mostly non-contributory transfers in cash, vouchers or food, which can be unconditional or conditional. They can include social grants, school feeding programs, food for work and cash for work. Safety nets are usually targeted at the poor and the vulnerable. Rising prices enhance the development of safety nets as a policy response to hunger. Mousseau (2010:20) perceives a positive development where safety net systems replace the food aid from rich countries. Rising prices therefore could necessitate the establishment or reinforcement of safety nets to mitigate the effects of high prices on the poor (Fратиanni, 2008:1).

4.7.5 Foreign food aid

Food aid usually takes the form of basic food and other commodities critical to the diets of developing-country (Ho & Hanrahan, 2010:12). According to Mousseau (2010:12)

when prices persistently rise, food aid donations normally go down and that increases the number of malnourished children worldwide. Unlike some domestic nutrition programs, foreign food aid can be an expensive option due to import costs. The challenge with the foreign food aid is the transportation costs in the form of shipping costs for both food purchases and food aid givers. The constantly increasing oil prices add to the cost of transport. Research in Asia and Africa has confirmed the correlation between food prices, oil prices and the level of child malnutrition (Capehart & Richardson, 2008:5-6).

4.7.6 Food stamps

Food stamps are government issued coupons sold or given to low income individuals and are redeemable for food. The intended benefit of food stamps is to curb undernourishment by encouraging participants to consume more food than they otherwise would. Food stamps provide good remedy for the poor during inflation. A study by Ploeg and Ralston (2008:3) found that although the initial aim of food stamp can be appealing, food stamps themselves tend to push a portion of participants into overweight conditions or obesity. Overweight and obesity are conditions that risk heart diseases, diabetes, cancer, and other illnesses. The prevalence of overweight and obesity is higher among low-income populations (Schmeiser, 2008:2; Kaushal, 2007:3).

4.7.7 Child nutrition

Mishra *et al.* (1999:5) define nutrition as the availability of energy and nutrients to the body's cells in relation to body requirements. The deficiency of nutrition is malnutrition which refers to any imbalance in satisfying nutritional requirements often with major effects on the health among children. According to Minujin *et al.* (2006:481) the world is falling short of its promise and commitment of ensuring that every child enjoys a safe and nurturing childhood. Nutrition during childhood is important as it can affect growth potential and risk of morbidity and mortality in later years of life. Malnourished children are more likely to grow into malnourished adults who face heightened risks of disease and death.

Child nutrition is necessary during inflation to help the pre-birth development of the brain and the body of a child as well as in the early years of life. This increases a child's potential; yet the physical, behavioural and cognitive development of too many children is threatened by inadequate nutrition. Payments for lunch and breakfast meals served to children in participating school-feeding-programs are the second largest federal commitment to domestic food assistance during rising prices (Tomlison, 2007:5).

4.7.8 Women, Infants and Children (WIC) programme

WIC Programmes are special supplemental nutrition programs for women, infants and children. These programmes provide nutritious foods to improve diets, provide information on healthy eating, and referrals to health care and other services for low-income women and children. The programmes are meant to increase the number of women receiving prenatal care, reduce the incidence of low birth-weight and mortality, reduce anemia, and enhance the nutritional quality of the diet of participants (Anon, 2006:3).

Unlike food stamps and child nutrition programmes, the WIC programmes are optional. Spending depends on annual appropriations, based largely on estimates of participation and the cost of the food packages that are purchased with WIC vouchers. WIC vouchers are redeemable at participating retailer for the items covered. Just as important, WIC vouchers are highly specific as to the food items they cover and have a relatively heavy emphasis on certain types of food - dairy items and infant formula being a major component (Davaney, 2007:1). WIC are necessary in avoiding the dangers of food inflation.

4.8 PAST FINDINGS ON RISING PRICES

There are numerous concerns over rising prices among most governments. These concerns arise because of the social costs brought by high prices to both the poor and the non-poor. Continuously rising prices without corresponding income compensation puts the already poor deep into poverty and introduces the new poor. Furthermore, given that poor people often take inflation as one of their top concerns (Easterly & Fischer, 2001:160), understanding the impacts of inflation is very important as different

types of poor households would require different types of policies to survive. To the UN, increasing prices pose a serious threat to the Millennium Development Goal of halving the people living in extreme poverty by 2015. The sections below give an overview of the results of past research on increasing prices.

4.8.1 Accelerates poverty and inequality

Rising commodity prices can aggravate both poverty and inequality. The poor face the greater challenge of increasing prices, especially rising food prices. Given that the poor and vulnerable households spend most of their income on basic foodstuffs, higher food prices erode their disposable income (Ivanic & Martin, 2008). Increasing food prices also push those that are already below the poverty line further down and introduce the new individuals into poverty. Inflation worsens both the depth of poverty and the poverty head-count (Compton *et al.*, 2011:iii).

Rising prices can also increase levels of inequality. In particular, report by the World Bank (2009) and Save the Children (2009) concur that inequality rates rise as a result of food price shocks. These assertions are supported by ADB (2008) cited in Ortiz *et al.* (2011:10) estimating that a 20% nominal food price increase may lead to 1% increase in the Gini-coefficient. The claim that inflation is the cruelest tax of all can be interpreted to mean that inflation hurts the poor relatively more than the rich. In this case, the inflation tax is particularly unfair in that the rich, who are likely to hedge themselves against inflation, are better able to protect themselves than the poor. The poor on the other hand, are likely to keep their assets in the form of cash whose value is eroded over time (Easterly & Fischer, 200:2).

Other impacts of rising prices on poverty found by past researchers are listed below:

- Sugema *et al.* (2010:53) found out that in general, price elasticity of poverty for food commodities is much higher than that of non-food commodities.
- Reyes *et al.* (2009b:1) indicate that the food and fuel price increase in 2008 increased the poverty incidence by 2- 2.5%, translating to about 1.8m to 2.2m people falling below poverty in Philippines.

- In aggregate terms, estimates from the 2007-08 food crisis suggest that higher food prices increased global poverty between 3-5% (Ivanic & Martin, 2008:1).
- The 2008 food price spike is estimated to have increased undernourishment by nearly 7% worldwide, or 63 million people (Tiwari & Zaman, 2010:1). Moreover, many countries that were most vulnerable to rising food prices during the previous crisis were those that were already facing high pre-existing levels of malnutrition (Ortiz *et al.*, 2008:11).

4.8.2 Effects on food consumption and nutrition

According to McGranahan (2008:2) household consumption patterns are affected by increasing prices in two ways. Firstly, the percentage of the household's expenditure dedicated to consumption, and secondly the consumer basket mix of goods oftenly purchased. Households that dedicate a higher percentage of their total income on food experience higher inflation since an increase in the price of a consumer basket will mean more money spent on consumption compared to those households whose proportion of money spent on food is small. Families with lower incomes therefore feel the financial pinch more acutely because food expenditure makes up a larger share of their total expenditure (Capehart & Richardson, 2008:4). The way households are affected also depends on the magnitude of the price increases in their consumer basket. If the basket is composed of goods whose prices are rising fast, then households will be greatly affected by inflation (McGranahan, 2008:2). This leads to dietary modifications, poverty, inequality, hunger and malnutrition, especially among women and children (Ortiz *et al.*, 2011:11).

The world has experienced a dramatic surge in the prices of many staple food commodities (Ivanic & Martins, 2008:1). This rise in food prices has had adverse effects on food consumption especially among the poor. Unlike a flood or famine the food inflation refers to a situation where food is there on the shelves but people simply cannot afford to buy it because of the issues of food affordability. The rising food prices are believed to have contributed to the severe increase in poverty during the recent years. Despite widespread concern about the impact of high food prices on the poor

people and on social stability (Wahl, 2009; World Bank 2008; Austings, 2008) very little information is available on the impact of this food inflation on the poor's demand patterns. Given that the poor spend most of their income on food, with less access to saving and credit, escalating food prices mean less money for education and healthcare (Braun, 2008:20). This negative impact on education severely limits opportunities for social and economic development and undermines the ability of the poor to break out of poverty. The rising food prices essentially put additional pressure on already strained household budgets. Food insecurity further poses a complex challenge to the UN's Millennium Development Goal.

Overall, higher food prices can lead to distress (sales of productive assets which can aggravate chronic poverty since there can be lingering impacts on food price crises). In the short run, households smooth their food consumption by increasing their labour supply, thus doing piece jobs and drawing down their savings. When families disinvest in their livelihoods, it results in the retardation of future economic growth and the means of reducing poverty (World Bank, 2008:3). Besides, global food prices can feed into the domestic prices and these international food prices have serious consequences for developing countries especially those that are dependent on food imports.

The extent of the impact of poverty caused by rising food prices varies according to where people live in a country. The urban poor are typically most affected while many of the rural households at least get some of their food needs from their gardens through subsistence farming (World Bank, 2003:2-3). One of the coping mechanisms used to counter the rising food costs at household level is the adoption of alternative consumption patterns. Poor families frequently responded to higher food prices by eating cheaper foods with lower nutritional value, consuming less food in meals and skipping meals (Compton *et al.*, 2010:2). Rising food prices results in the poor households turning to begging and illicit activities. There is also evidence of starvation and death in some parts of the developing world with severe consequences for children and women that suggest their vulnerability to exploitation and abuse (Mendoza, 2010:6). Severe consequences of starvation cause micronutrient and caloric

deficiencies in the body which ultimately lead to weight loss and severe malnutrition (Ortiz *et al.*, 2011:11).

Rising food prices threaten the nutritional status and livelihood of vulnerable households (Braun, 2008:20). The harmful effects of malnourishment and hunger are most pronounced amongst the young children. Victora *et al.* (2008:2) pose a concern on children who suffer from malnutrition while in the womb in that the effect is irreversible in terms of health, cognitive development and productivity. Undernourished children also tend to develop their physical and mental capabilities more slowly than healthy children. This is because the constant hunger weakens their immune systems and makes them more susceptible to diseases. Children are in a weak and vulnerable situation, considering their need for a stable calorie intake at early stages of development. The issue of diet modification therefore becomes a paramount issue bearing in mind the threat imposed by the rising prices on child welfare in developing nations (Compton *et al.*, 2011:iv).

Food prices are consistently going up for a number of different reasons. One culprit has been the rise in the price of energy and its effects on food production and value-addition. Research by Arndt *et al.* (2009:22) indicates a positive relationship between the movement of fuel prices and food prices. The link of fuel and food sector through transport and production means cause volatility in the food prices. In some countries a combination of increasing demand from a growing world population, floods and droughts has seen food costs escalate leading to riots and protests.

In light of the dangers caused by the increasing food prices which include the right to food, ensuring food security in the face of rapidly rising prices requires a combination of effective policies. Governments must respond to food crisis by means of reducing malnutrition rates and increasing social protection. There has been doubt on the appropriateness of policy standpoints that tightens public expenditure when the need for prompt food responses becomes urgent (UNICEF, 2005:1).

4.8.3 Effects on women and children.

The effect of rising prices in the past years has affected mostly women and children. Reyes (2010:3) noted that parents withdraw their daughters from school. The negative impact on girls' education severely limits opportunities for social and economic development and undermines their ability to break out of poverty (Fook, 2011:1). Holmes (2009:1) further suggests a strong gender disparity in food consumption during shortages where women and girls tend to consume less when food prices rise. Women also account for the majority of the world's poor and bear a larger impact of rising food prices and growing food insecurity in developing countries (Fook, 2011:1).

4.8.4 Survival means during rising food prices

Rising prices force households to adopt different survival strategies. There are differences in the way the poor and non-poor households cope with the rising prices. Some of the survival means adopted by the poor are detrimental in the long run; hence governments propose several interventions to mitigate the crisis of the affected households. According to Otiz *et al.* (2008:1) poor households are in an increasingly weak and vulnerable situation to deal with high prices. Strategies normally adopted by the poor include eating less nutritious foods, skipping meals, reducing expenditures on health and essential medicine, selling assets and working longer hours in informal activities. Involuntary meal skipping causes micronutrient and caloric deficiencies and ultimately severe malnutrition. Developing countries' governments may expand their spending especially on social welfare to mitigate the negative social impacts of rising prices (Reyes, 2010:3).

4.8.5 Policy response

The evidence on the negative effects of rising prices on households and countries has prompted policy responses to mitigate the threat. Increasing prices caused a move to a Comprehensive Framework for Action to overcome the food crisis (UN, 2010b:1). This move included short-term emergency support and long-term development interventions. It further called for \$25 to \$40 billion annually for food aid, agricultural development, social protection and nutrition programmes (Ortiz *et al.*, 2008:15).

Braun (2008:2) noted that mitigating the growing price burden for the poor in the short and medium term requires immediate expansion of social-protection measures, nutrition interventions and supporting programmes. Social protection could include boosting employment; cash transfer programmes and social security systems that target the poorest. For social protection to be effective, it should be supported by good governance practices. According Ortiz *et al.* (2011:16) France has made an international agreement on the regulation of food commodity derivative markets beginning in 2011 through agricultural subsidies.

4.9 FOOD AND INFLATION TRENDS IN SOUTH AFRICA

In South Africa, inflation has been unstable even long before the democratic government. According to Rangasamy (2009:2) inflation was within a single digit territory for much of the period up until the 1970s. It then rose in the 1970s and 1980s, to double digit levels averaging 10% in the 1970s and 16.6% in the 1980s due to the oil crisis and sanctions against the country.

Aron and Muellbauer (2007:709) note three distinct monetary policy regimes targeting at inflation in South Africa from 1980. The first period covers 1980 to 1989 where inflation was high ranging from 11.5 to 18.6% and monetary policy was not successful in containing inflation. The average inflation rate for the decade was 14.7%. The second period, 1990 to 2000, saw a significant progress in the pursuit of a lower inflation rate. Inflation fell significantly in the early part of the 1990s to beneath 10% further decreasing to 5.2% in 1999. Consumer prices rose by 9.3% on average during the 1990s. The third period covers 2000 till present where the SARB pursues an official and clearly stated inflation target (Burger & Marinkov, 2009:1).

Inflation targeting is a monetary policy strategy aimed at maintaining price stability by focusing on deviations in published inflation forecasts from an announced inflation target (Svensson, 2009:1). The target is publicly announced and any deviations from the target are noted. In 2001 the targets for the year were set for South Africa at 3-5% However, an increase in the inflation rate in 2002 prompted the Minister to announce in October 2002 that the inflation target would be at 3-6% (Aron & Muellbauer, 2005:7), a

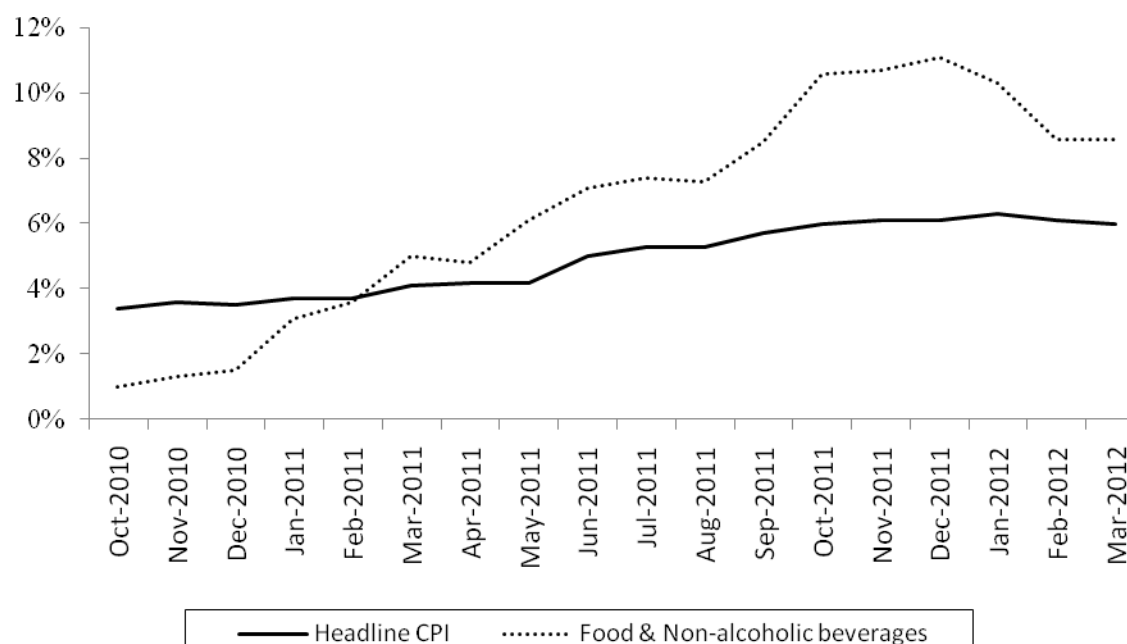
band which is still in practice today. Monetary policy in South Africa is aimed at reducing inflation and improving international competitiveness. Worrying to policy maker is that the rate of inflation in South Africa remains above the rates of the country's main trading partners like Germany, Japan, the UK and the USA (Tshabalala & Rankhumise, 2011:111). This raises the need to determine the extent to which the SARB can combat inflation with the traditional instruments of monetary policy by a clear understanding of the forces driving and perpetuating inflation. Among these factors, the following can be said to determine inflation in South Africa according to Akinboade *et al.* (2001:1):

- The extent and significance of changes in foreign prices and the exchange rate to domestic prices in South Africa.
- Salary and wage increases in excess of productivity growth. Wage-push inflation in South Africa is an important issue where the labour market is characterised by a powerful and highly centralised union movement.
- The link between the growth of the money supply and price formation in South Africa.
- Demand-pull inflation in the economy.
- The issue of imported inflation,
- Highly unequal distributions of income and wealth and widespread poverty even among full-time workers in a number of sectors (Akinboade *et al.*, 2001:1).

According to Mboweni (2004:2) the objective of such a monetary policy is based on the proposition that inflation is bad for economic growth, employment creation and distribution of income. Koch and Bosch (2009:1) refer to inflation as a cruel tax, possibly because it hurts the poor more than the rich, and may not be well understood by the affected consumers, therefore seen as unfair.

Figure 4.1 below gives the trend on the CPI and the non-alcoholic beverages for 2010-2012 on a year to year basis.

FIGURE 4.1 HEADLINE CPI AND FOOD AND NON-ALCOHOLIC BEVERAGES CPI FOR 2010 – 2012 (YEAR-ON-YEAR)



Source: Stats SA, 2012:3

The main measure of inflation in South Africa is the CPI. The items contained in the calculation of the CPI include the food and the non-alcoholic beverages which has been the most volatile items. Also the weight carried by food and non-alcoholic beverages is high but nevertheless less than that of housing and utilities and transport in South Africa. The relationship between the headline CPI and the food and non-alcoholic beverages CPI from October 2010 to March 2012 in South Africa is shown above.

The above figure depicts a strong correlation between movements in headline CPI and food and non-alcoholic beverages inflation. Food inflation has in a greater period exceeded head line inflation with the peaks in food inflation being in December 2011 where the figure reached the heights of 11.1%. The food and non-alcoholic beverages inflation has been rising faster than the CPI. Before February 2011, food prices were lower than the CPI.

Food prices have an overall impact on consumer inflation. This is essentially due to products exerting direct price impacts on overall inflation (Rangasamy, 2010:2). The direct price effect is related to the weight of food in the consumer price index. Since

South Africa has a larger weight for food items in the consumption baskets, this implies that, *ceteris paribus*, food price increases will have a larger impact on inflation trends. According to the figure, both overall inflation and the food and non-alcoholic beverages prices has been unstable in the past years.

4.10 SUMMARY AND CONCLUSION

The chapter has provided the theories of inflation. Inflation carries many definitions but the general explanation is that it is a situation where the general price level is rising. Though the definitions may differ, there is unanimous concession that inflation is undesirable in the economy.

The approaches to causes of inflation discussed are the monetary, demand pull, cost push and the structuralist approach. According to monetarists, inflation is a pure monetary phenomenon caused by an increase in money supply. The Keynesian economists however believe that inflation is caused by an increase in any of the components of aggregate demand. The cost push inflation is caused by an increase in the cost of production. The last approach, structuralists believe that inflation is a result of political and social factors that negatively publicise the economy.

Inflation can be measured in various ways, the most common being the CPI which is also used in South Africa. The PPI differs from the CPI due to subsidisation, profits and taxes. The other price index, Laspeyres index measures the price increases which are weight by quantities in base year. Paasche index measures how much the basket in the current period would have cost in the base year. The Fisher price index is then a geometric average of the Laspeyres and the Paasche index calculated as the square root of their products. This minimises the bias associated with each. The GDP deflator is a broader price index encompassing all the goods in the GDP and estimates current prices to constant prices. The last index, the discussed, the IPI represents the ratio between the current GNP to constant GNP.

The effects of inflation in the economy include the loss of purchasing power, reduction in investment, price distortions and income redistribution and increase in poverty. The increase in poverty results in malnutrition and even death especially among children. In

response to high rates of inflation, economic agent can practice rent seeking and hoarding in order to avoid uncertainty. Since inflation is viewed as undesirable in the economy, protective mechanisms can be adopted in order to hedge against the impact of inflation. At a national level, the policies include the practice of real interest rates, price fixing, enlargement of safety nets, food stamps and nutrition programmes.

Economic agents have some expectations about inflation. According to the rationale expectation theory, economic actors look rationally and do not respond to immediate opportunity costs. The adaptive expectation is based on the backward looking behaviour where expectations are based on what they have been in the past. Static expectation is when the expectations do not change.

South Africa has always faced an unstable inflation figures even during the apartheid regime. The South African Reserve Bank has decided to make inflation its top priority through the inflation target policy framework. The inflation target was announced in 2000 and was to start in 2002. A good policy though it can be, it has sometimes failed to keep inflation within its band especially during the global economic crisis. Food prices have been very volatile in South Africa due to both escalating fuel prices and increases in the cost of production. The next chapter profiles Bophelong based on the survey results.

CHAPTER 5 THE PROFILE FOR BOPHELONG

5.1 INTRODUCTION

Household characteristics play an important role in estimating demand parameters for the evaluation of the effectiveness of different economic policies (Delgado & Miles, 1997:410). Slabbert (1997:90) notes that keeping track of changes in household characteristics over time is important as it helps monitor the impact of poverty reduction policies and efforts on the different aspects of poverty. Profiling creates a picture of the causes of poverty in the Bophelong Township.

This chapter explains the geographical location of Bophelong, research methodology, and moves to the construction of the household profile in the township of Bophelong based on the survey results. The way data was collected and the sample size are also explained in this chapter. The poverty calculation method used in this study is also explained. The economic and social characteristics of households are presented in the form of a profile. These characteristics are presented for households of different economic status where necessary, thus the non-poor, moderately poor and the very poor households.

5.2 GEOGRAPHICAL LOCATION OF BOPHELONG

The Bophelong Township falls under the Emfuleni municipality. The Emfuleni municipality is one of the three municipalities that constitute the Sedibeng District in the Southern part of the Gauteng Province in South Africa. Other local municipalities include Midvaal and Lesedi. The Emfuleni municipality is situated at the Western-most part of the district, and covers the entire southern area of the Gauteng province. The Vaal River forms the southern boundary of this municipality (Urban Econ, 2009:2).

Emfuleni is rich in history as it encapsulates the Anglo Boer War, heritage assets such as the Sharpeville Monument and the liberation struggle. This is epitomised by the signing of the Constitution of the Republic of South Africa in 1996 in Sharpeville. The municipality has access to a well-maintained road network - N1 national route linking

Johannesburg and Bloemfontein, with two main towns, namely, Vereeniging and Vanderbijlpark within its jurisdiction while Sasolburg city centre is only 10 kilometers to the south. Emfuleni contains approximately six large peri-urban townships namely Bophelong, Tshepiso, Evaton, Sebokeng, Sharpeville and Boipatong.

After the democratic elections in 1994, the Emfuleni municipality was restructured to include Black townships and former White towns. The settlement patterns in the area are largely dictated by the history of the area. There are San rock engravings near the Vaal River which verify that the San people originally inhabited Emfuleni (Urban Econ, 2009:2). In 2007, the Emfuleni municipality recorded a population of 650 687 residents. This was a growth of 1.2% from the 2001 population figures for the area (Community Survey, 2009:23). Community Survey (2009) further states that the population for women was 336 414, of which 287 309 were Black.

5.3 METHODOLOGY AND DESIGN

The results discussed in this chapter are based on cross-sectional data collected through in-house personal interviews by means of questionnaires. A pilot study was conducted on a sample of 25 respondents. This was done in order to test validity, reliability and applicability of the research instrument; particularly to ensure that the questionnaire meet the researcher's expectations in terms of the information obtained (Aaker *et al.*, 2004:329). Necessary adjustments were made on the questionnaire after which a total of 316 household questionnaires were administered.

The questionnaires were administered by the principal author with the assistance of four trained interviewers. Ethical considerations such as the respondents' right to confidentiality and privacy, protection from harm, anonymity and informed consent were strictly adhered to (Nunnally, 1978:2). The sample size (301 questionnaires) was considered reasonable and in line with a similar study conducted by Slabbert (2009) who administered 286 household questionnaires in the same township.

In the survey, the head of the household was most preferred to answer the questionnaire. In cases where the household head was not found, the spouse was used. The majority of the questionnaires, 56% were answered by the head of the

household and 26% by the spouses. Child respondents were 16% and extended family 2%. This adds to the information reliability where most respondents were either the household head or the spouse. The head of the household respondents had better information especially when relating to household income and expenditure.

5.3.1 Data preparation

On completion of the fieldwork, the research questionnaires were validated (edited) and coded to ensure that all questions were answered properly and in full. The tasks such as editing, coding, capturing and storing of raw data were performed. Although many researchers regard this as a tedious exercise, it is paramount to the success of a research project as the results are largely dependent on the accuracy of such raw data (Tustin *et al.*, 2005:453). Information was entered into a data sheet, cleaned and a total of 301 household questionnaires were found to be analysable, yielding a satisfactory 95% response rate. The 301 fully completed usable questionnaires, captured information from a total of 1 200 household members. The questionnaire included questions on household demographic information, income and expenditure patterns as well as the perceptions on the impact of rising prices by households.

5.4 POVERTY IN BOPHELONG

Slabbert (2004:37) defines a poor household as one whose combined income of all its members is less than the cost of the minimum calorie intake and that of other necessities of the household. A household is defined as people living together, sharing food and work according to family rules defined within culturally specified socio-economic boundaries (Ngwenya, 2008:2).

5.4.1 Poverty line calculation

South Africa has not adopted a national poverty line yet. Various poverty researchers adopt different poverty lines. In the calculation of national poverty lines as a statistical measure, the most common approach is to estimate the cost of a minimum basket of goods that would satisfy the necessary daily energy requirement per person over a period of a month. The South African Medical Research Council (SAMRC) recommends a daily energy requirement of 2 261 kilocalories per person (Bhorat & Westhuizen,

2010:6). Using the 2 000 Income and Expenditure Survey data, Stats SA estimated that when consuming this kind of foodstuff usually available to low-income South Africans, it costs R211 per person every month to satisfy a daily energy requirement of 2 261 kilocalories. This means that R211 is the amount necessary to purchase enough food to meet the basic daily food-energy requirements for the average person over a period of one month using the year 2 000 prices.

Further consideration was the need for other goods and services in addition to food in order to meet all basic needs. This includes accommodation, energy, clothing, transport and medical services, amongst other things. SAMRC estimates such essential non-food items to be R111 per capita per month. Adding these figures together (R 211 and R111) gives an estimate of the minimum cost of essential food and non-food consumption per capita per month of R322, thus amounting a poverty line of R322 per capita per month in 2 000 prices. Hoogeveen and Özler (2004:2) agree with the R322 poverty line in South Africa and call it the lower-band, then propose an upper-band of R593 per capita per month using the year 2000 prices. These two poverty lines were later supported by other researchers (Mabugu & Chitiga, 2007:17; Stats SA, 2007:8).

This study adopted the lower-band poverty line (R322 per capita per month using year 2 000 prices). When increased with inflation, the lower threshold amounted to R570 in 2010 (Stats SA, 2011). For this study the lower poverty line was adjusted for inflation, using the published inflation figures by Stats SA up to March 2012 and calculated at R584 per capita per month. The poor were selected from the sample by utilising this poverty line. This amount was multiplied by the number of people in the household and any household whose combined total income was less than its poverty line was deemed poor. The head-count index, being the proportion of the population falling below poverty line was adapted in this study to indicate the fraction of the poor households in the sample. According to the sample survey, the head-count index was calculated at 56% of the sampled households.

The poor households were extracted from the sample and divided into two categories. The first category consisted of the households termed moderately poor in the survey.

These were households whose income was between 50% and 99% of their poverty line inclusively. The second group comprised of households categorised as very poor according to the survey results. These were households whose income was between 0% and 49% inclusively of their respective poverty line. Of the 56% found to be poor in Bophelong, 26% were moderately poor and 30% very poor. These were calculated as the percentage of the whole sample including the non-poor for comparison purposes. The profiling of the sample was therefore done in the categories of non-poor, moderately poor and very poor households.

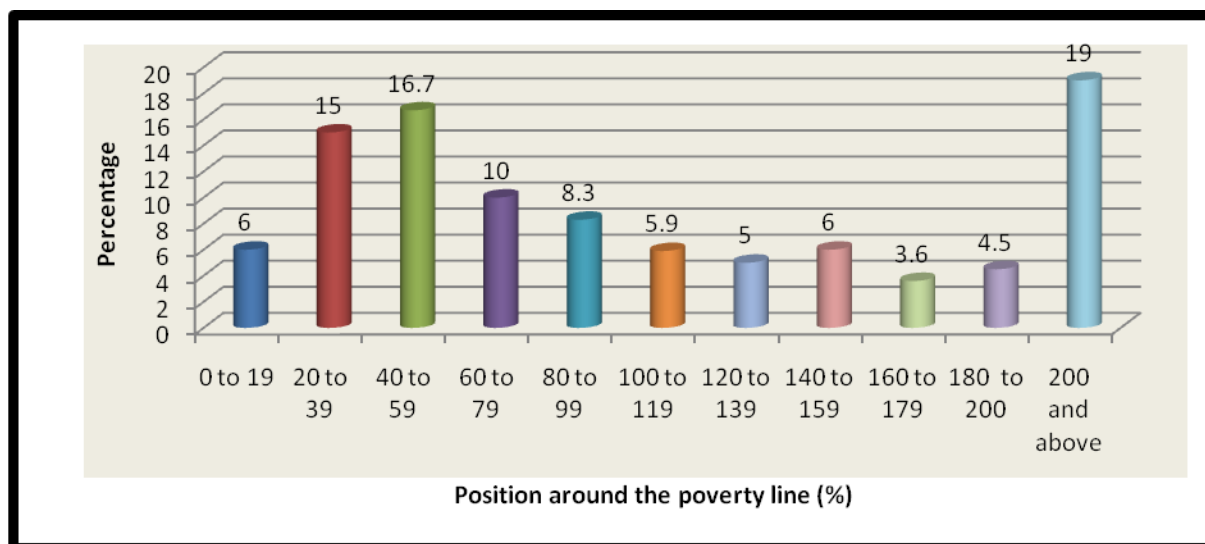
5.4.2 Poverty profile in Bophelong

The poverty rate calculated based on the study poverty line of R584 per capita per month showed that 44% of the interviewed households were above their poverty line, 26% considered moderately poor and 30% very poor. The poverty gap measures the average shortfall of the incomes of the poor from their poverty line while the poverty gap index measures the extent of the shortfall of incomes below the poverty line. The poverty gap index in this study was calculated to be 0.48, meaning that on average, the poor needed 48% of their incomes to reach their respective poverty lines. In monetary terms, the average monthly income shortfall was calculated to be R1 290.18 per household. In the moderately poor households, the poverty gap ratio was 28% and in the very poor household 69%.

5.4.3 Distribution of households around their poverty line

Figure 5.1 shows the distribution of poor households around the poverty line. The poor are those who fall below 100% of their poverty line. The figure depicts that the majority of the households fall below their poverty line. Among the poor households, the majority (16.7%) earn between 40% and 59% of their poverty line. The figure also indicates that 6% of the poor are earning an income of between 0% and 20% of their poverty line.

FIGURE 5.1 HOUSEHOLDS DISTRIBUTION AROUND THEIR POVERTY LINE

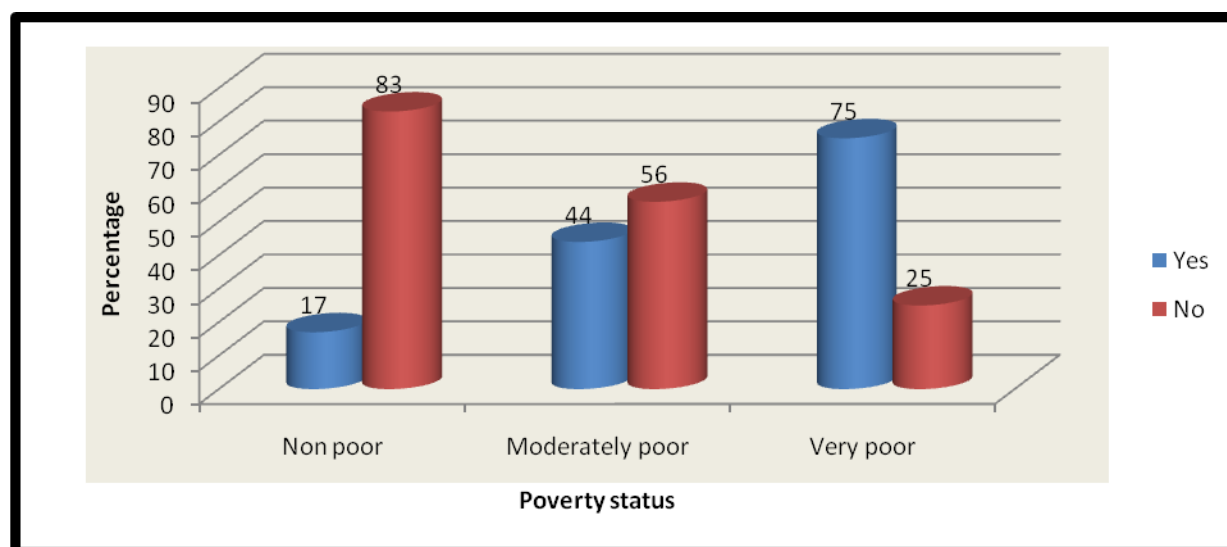


Source: Survey Data

5.4.4 Household poverty perceptions and indicators in Bophelong

Respondents were asked to define poverty. The definitions given were wide and included lack of income, lack of food, being despised in the society, having many children and being sick but failing to buy medication. Respondents were further asked if they considered themselves poor in order to establish the relationship between the poverty rate and those who consider themselves poor. Since poverty means different things to different people, establishing this perception from the respondents was important in Bophelong. Results of this question are shown in **figure 5.2 below**. In the non-poor households, 17% considered themselves poor. In the moderately poor and the very poor households, 56% and 25% respectively considered themselves non-poor. The reasons cited for being poor were in line with the respondent's definition of poverty which varied extensively.

FIGURE 5.2 DO YOU CONSIDER YOURSELF POOR?

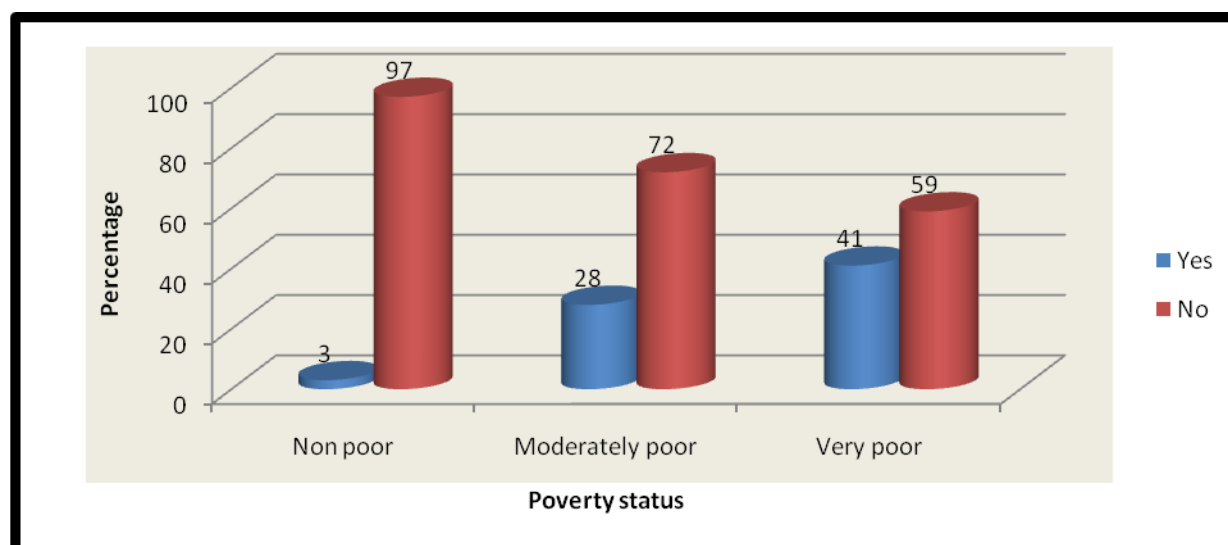


Source: Survey Data

Poverty manifests itself in the form of lack of food. According to Dickes *et al.* (2008:2) the poor are deprived of necessities of life with the very poor being denied even sufficient food. Respondents were asked if there were days in the last three months when there was no food in the house. The question posed to the respondents was “Are there days in the last three months when you did not have food”? **Figure 5.3** below shows that 3%, 28% and 41% have had days without food in the non-poor, moderately poor and very poor households respectively. According to FAO (2008:1) lack of food leads to the consumption of non-nutritious and stale supplies which are a threat to a households’ health.

Households indicated that the lack of food was driven by the recent rise in prices for basic foodstuffs. According to Sotherwaith and Sovannariths (2008:12-13) food price increases cause changes in demand and at the markets. This calls for short, medium and long-term measures for food security and poverty reduction.

FIGURE 5.3 DAYS WITHOUT FOOD



Source: Survey Data

5.5 DEMOGRAPHIC PROFILE OF THE SAMPLE

This section provides a demographic profile of the sample based on the survey results. The information is shown for all households types, thus the non-poor, moderately poor and the very poor households where necessary. The need for profiling the demographic features lies in the fact that these features have a bearing on the expenditure patterns, economic welfare and poverty among households. More so, demographic features provide an insight, background and introductory information necessary before answering the research question.

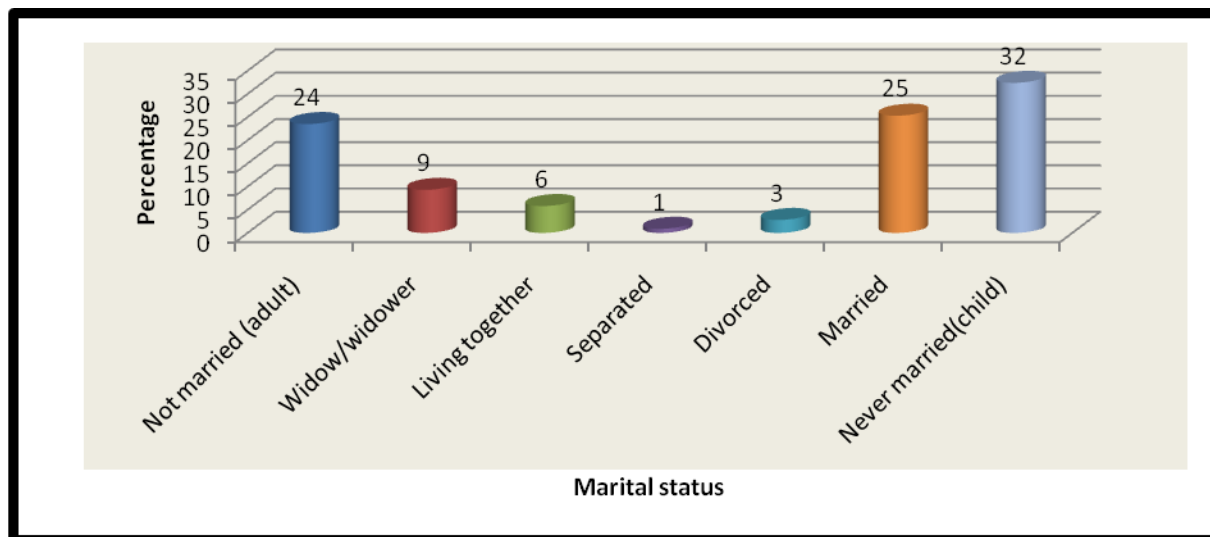
5.5.1 Population composition

The population in Bophelong reflects more women than men. In the sampled population, women constituted 55% and men 45% of the population. The female population in the township showed a slight decrease when compared to the composition of 56% for women in 2009 (Slabbert, 2009). A survey by Stats SA (2011:15) indicated more women than men in South Africa with 52% of the population being female. However, Gauteng depicts the opposite trend where the total population for men and women was estimated to be 51% and 49% respectively in 2010 (Stats SA, 2011:15).

The explanation for this is that Gauteng is the hub of South Africa's financial and services sector with its link to the mining industry in the province. It is also an economic powerhouse, attracting male migrants from Southern Africa and other regions in South Africa (Stats SA, 2011:16; Cross *et al.*, 2005:5).

Figure 5.4 below shows the marital status of the sampled population in Bophelong.

FIGURE 5.4 MARITAL STATUS



Source: Survey Data

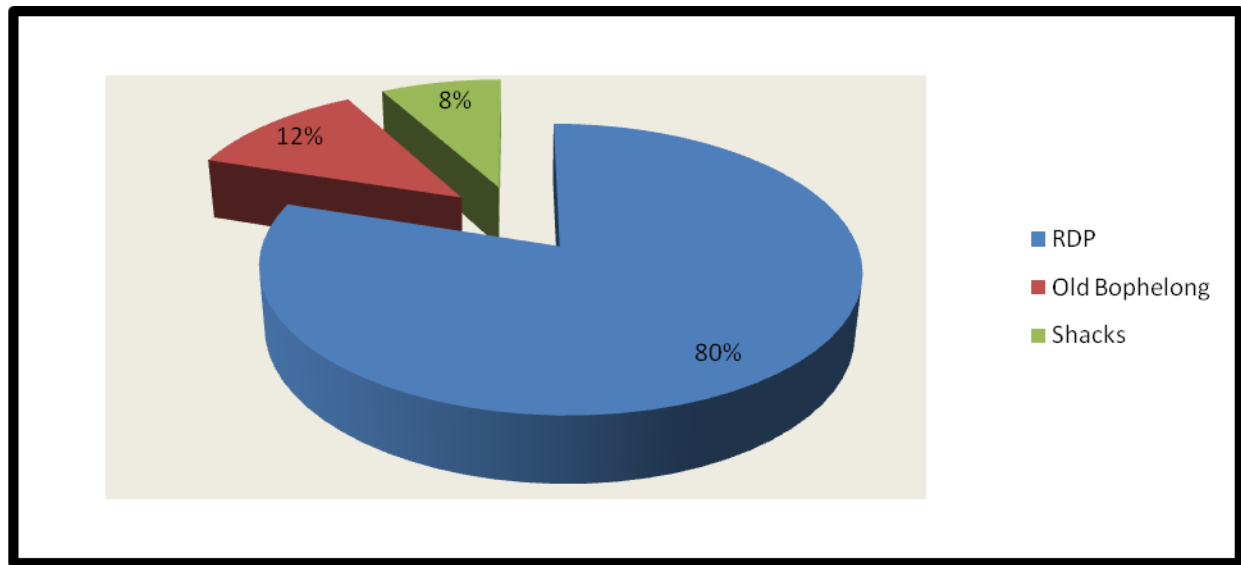
In the sampled households, 25% of household members were married. The percentage of adults not married was 24% and the children 32% of the sampled population. The divorced and the separated constituted 3% and 1% respectively. According to Slabbert (2009) the number of married couples in Bophelong was 29%. Driel (2009:130) also confirms that the number of married couples in Bophelong is therefore falling.

5.5.2 Type of dwelling unit

A township in South Africa is usually designated for Blacks and typically characterised by informal settlements in the form of shacks. The survey was randomly selected and the representative type of a dwelling unit is shown in **figure 5.5** below. The majority of the houses in Bophelong were built under the government scheme of the Reconstruction and Development Programme (RDP) launched by the post 1994

government. Houses built under the RDP scheme comprised 80% of the total sample. The old Bophelong houses were built by the old government, and were 12% in the sample. The 8% remainder was shacks. According to the Department of Housing (2012) 83% of the houses in Bophelong were built under (RDP).

FIGURE 5.5 TYPE OF A DWELLING UNIT

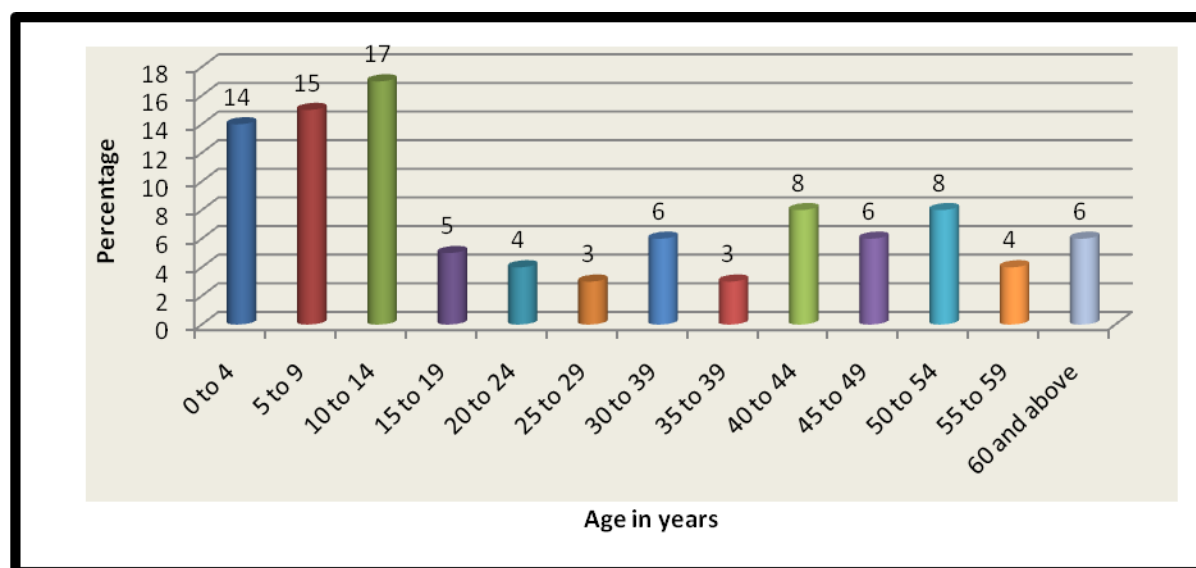


Source: Survey Data

5.5.3 Length of stay in Bophelong

Since the Bophelong was being studied, it was necessary to establish the time period respondents have been staying in Bophelong. This meant to find out if the survey was done on a new resident of the township or on people who have stayed for long. The number of years respondents have been residing in Bophelong is shown in **figure 5.5**. In the figure below, 14% of the respondents had stayed in Bophelong for at least 4 years. The largest percentage, 17% had stayed in Bophelong for a period of 10 to 14 years. The least number were those who had stayed for 25 to 29 years and counted for 3%. Most respondents, 86% had stayed in Bophelong for at least 5 years.

FIGURE 5.6 LENGTH OF STAY IN BOPHELONG



Source: Survey Data

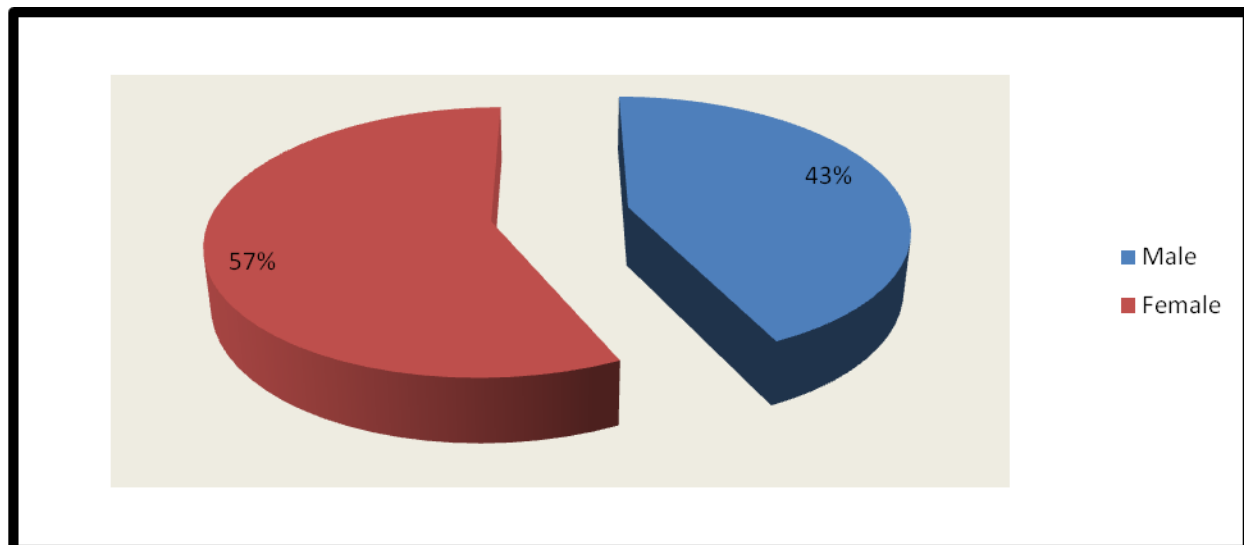
5.5.4 Household characteristics

The section below provides household characteristics. Specifically the type of a household head, household composition of members, education and employment status of members is profiled. The head of the household is defined as a household member with authority and income earning responsibility (Barros *et al.*, 1997:2). Household membership in developing countries is often complex. Not only does the definition of membership in all likelihood contain diverse groupings but also, what is associated with membership in a household may be more varied. Household members may be physically living, or residing, in the household. However, people can be identified as members of a household but be ‘non-resident’ for a large part of the year (Posel *et al.*, 2006:836). Due to this diversity, a household member in this study relates to people who stayed permanently on the site.

The gender of a household head is an important demographic feature in a household survey. Normally, a household is either headed by a single person or a couple. A household headed by a female is termed a female-headed household. The household features for the female-headed and the male-headed households differ. In the sampled

population in Bophelong, the number of households headed by males was 43%, making those households headed by females 57% as shown in **figure 5.7** below.

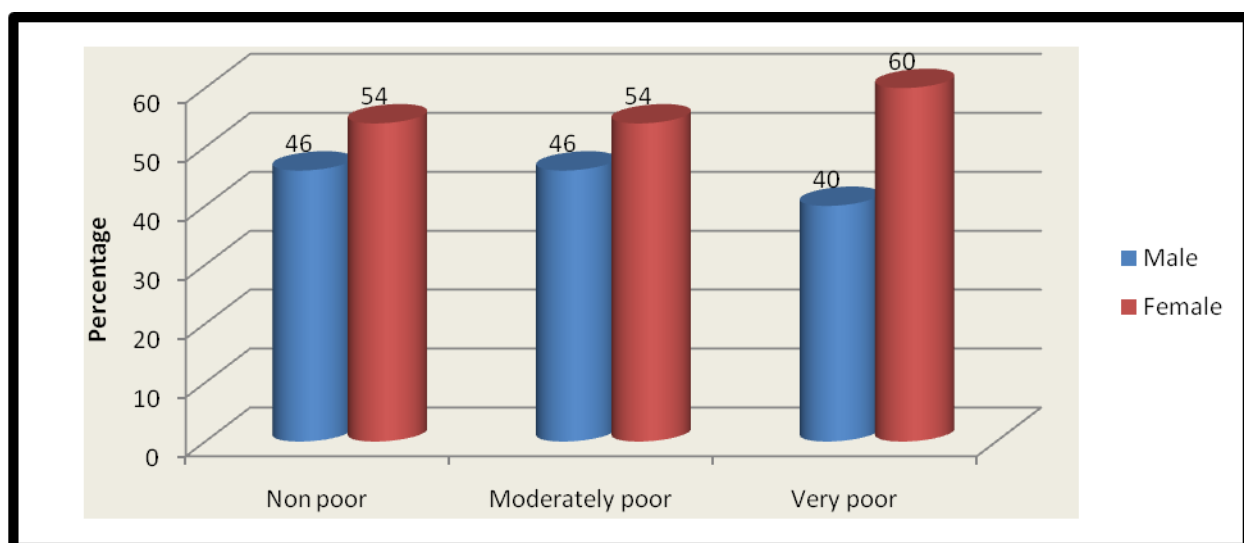
FIGURE 5.7 GENDER OF HOUSEHOLD HEAD



Source: Survey Data

A further inquiry was made on the relationship between poverty status and gender of the household head. The results are shown in **figure 5.8** below. In the non-poor households, 46% were headed by male while 54% by female. In the poor households, 54% and 60% of these were headed by female in the moderately poor and very poor households respectively. The majority of the households in Bophelong were headed by women in the sample. Other studies have indicated that households headed by women are poorer than those headed by men (Dubihlela, 2010; Medeiros & Costa, 2006; UN, 2005:6).

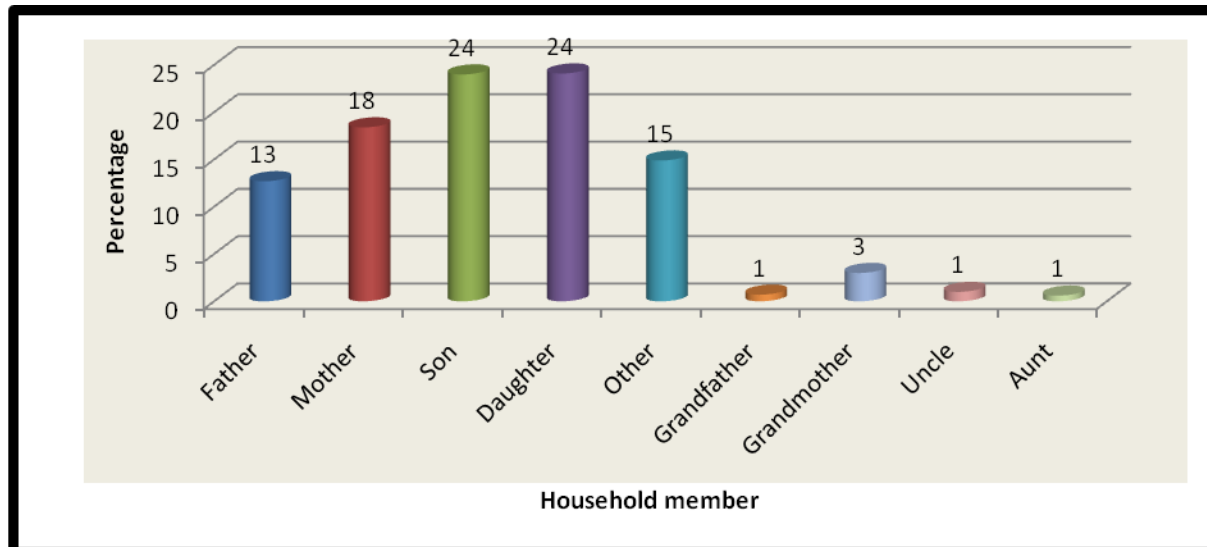
FIGURE 5.8 HOUSEHOLD HEAD AND POVERTY STATUS



Source: Survey Data

The composition of household members is shown in **figure 5.9** below.

FIGURE 5.9 COMPOSITION OF HOUSEHOLD MEMBERS



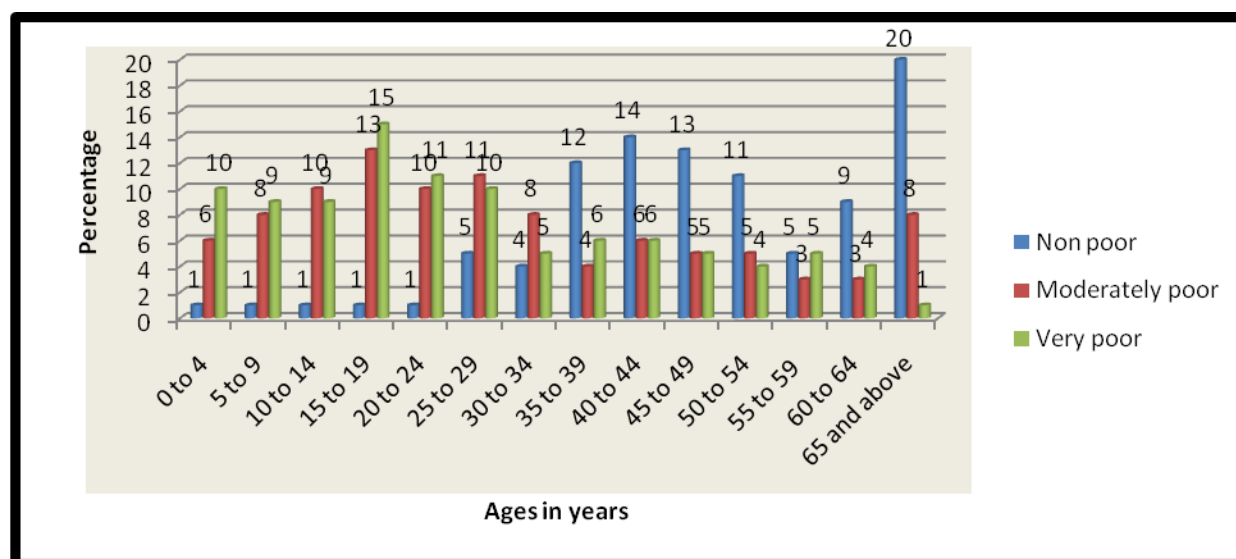
Source: Survey Data

In the sampled population, 13% of households composition were fathers and 18% mothers. This could be an indication that there are few households with fathers in Bophelong compared to those with mothers. The son and daughter composition was

24% in both cases. The least percentages were for aunts, uncles and grandfathers which were 1% in each. The other (15%) included the non-mentioned extended family members like cousins, nieces and nephews and friends.

The ages of the household members are shown in the **figure 5.10** below. Displaying ages of household members gives a clear picture of who the majority are in Bophelong for policy direction. This may help the direction of poverty alleviation schemes, if policies are to be effective and relevant in reducing poverty. The population below the age of 15-years and above 60-years is regarded as the economically inactive population. An attempt was made to find the different age categories in the households at different poverty levels. The non-poor households seemed to have the lowest percentage of the young population, where from the age category of 0-4 years to 20-24 years, there was only 1% in each age category. The majority of the people living in the non-poor households (20%) were those in the age category of 65+ years, indicating that most pensioners were in the non-poor households. This could be a possible reason why these households were above their poverty lines since the income from pension was significant, where most of the recipients earned R1 200 per month. In the non-poor households as well, the the majority fell in the income-earning age, thus the age category of 35-65 years.

FIGURE 5.10 AGES OF HOUSEHOLD MEMBERS



Source: Survey Data

The age categories of the very poor households was characterised by a young economically inactive population. The population below the age of 19-years constituted 43% of the population in the very poor households. Noteworthy is that although the majority of this population qualified for the government's child grant, the amount received per child averaged R270 per month and was far less than the poverty line of R584 per individual per month used in this study. It therefore could not even lift the recipient above his/her poverty line. Moderately poor households were characterised by a high young age population as well where 37% of the population was below 19-years and below.

5.5.5 Dependency ratio

Dependency ratio is the number of non-income earners that depend on the income of an earner. The survey results showed an average dependency ratio of 4.3 in Bophelong. A high dependency ratio is usually associated with high poverty incidence where a large number of people depend on the income of one individual (Mallick & Ravi, 2009:1). In the moderately poor households the dependency ratio was found to be 4.4 and in the very poor households a dependency ratio of 5.5 was found, while 3 was found for the non-poor. This means that a single income earner has to support an

average of 4.4 and 5.5 individuals in the moderately poor and the very poor households respectively. The dependency ratio for the whole of Emfuleni, to which Bophelong belongs, was calculated to be 3.41 in 2002 (Van Vurren, 2003:86). A study by Slabbert (2009) found a dependency ratio of 5.5 for the poor in Bophelong. Dependents include children, unemployed and the elderly population groups. South Africa had an overall dependency ratio of 3.83 in 2010 while the world has a dependency ratio of 2.28. This means that the dependency ratio in South Africa is higher than that globally. Bophelong however had a higher dependency ratio than the average dependency ratio in South Africa.

5.5.6 Household size

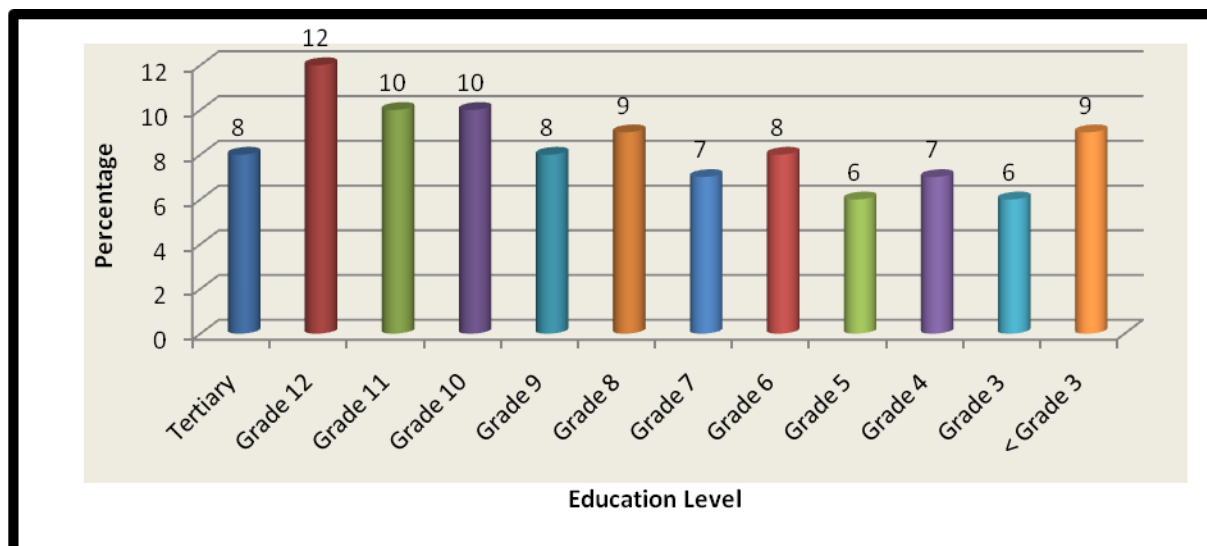
This is the number of people residing in the same household. In building the model of the determinants of poverty, the size of the household was made to be the independent variable. In the sample for the whole of Bophelong, the average household size was 3.96 members. In the non-poor households, the average household size was 2.97 members. In the selected moderately poor households, it was 4.2 members and 4.7 members for the very poor households in Bophelong. The picture depicted here is that the larger the household size, the larger the poverty incidence in a household. In South Africa, the average household size is 4 for the Black population group (Stats SA, 2009:11). A high household size expresses the increased burden of responsibility to the household head.

5.6 EDUCATION QUALIFICATIONS

This section analyses the education profile of household members of Bophelong. Education is key to development and a shield against unemployment which causes poverty. When people are enlightened, they become cautious of other happenings and more importantly able to lead better lives (Ezewu, 1985: 3). The qualifications of those still in school is shown in **figure 5.11** below. Most children were at Matric level, which makes them economically inactive, even though most are above 15-years of age. The highest numbers were those in Grade 12 which constitutes 12%. Grade 11 and

Grade 10 both have 10% each. Those below Grade 3 constitute 9% of the total in formal schooling.

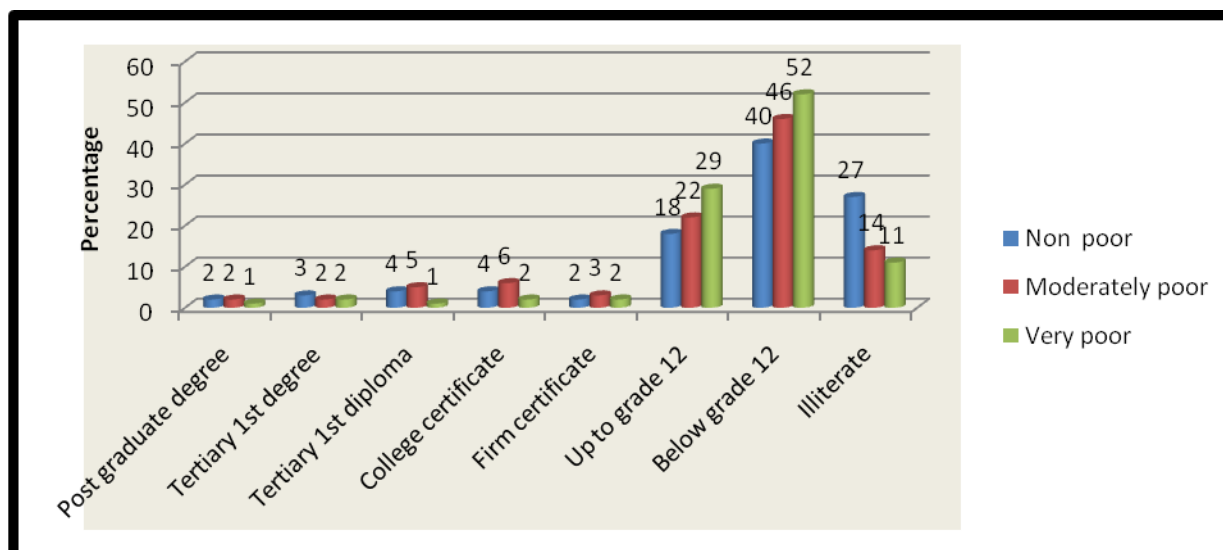
FIGURE 5.11 QUALIFICATIONS STILL AT SCHOOL



Source: Survey Data

Below are the educational qualifications of those who have left school already.

FIGURE 5.12 QUALIFICATIONS OUT OF SCHOOL



Source: Survey Data

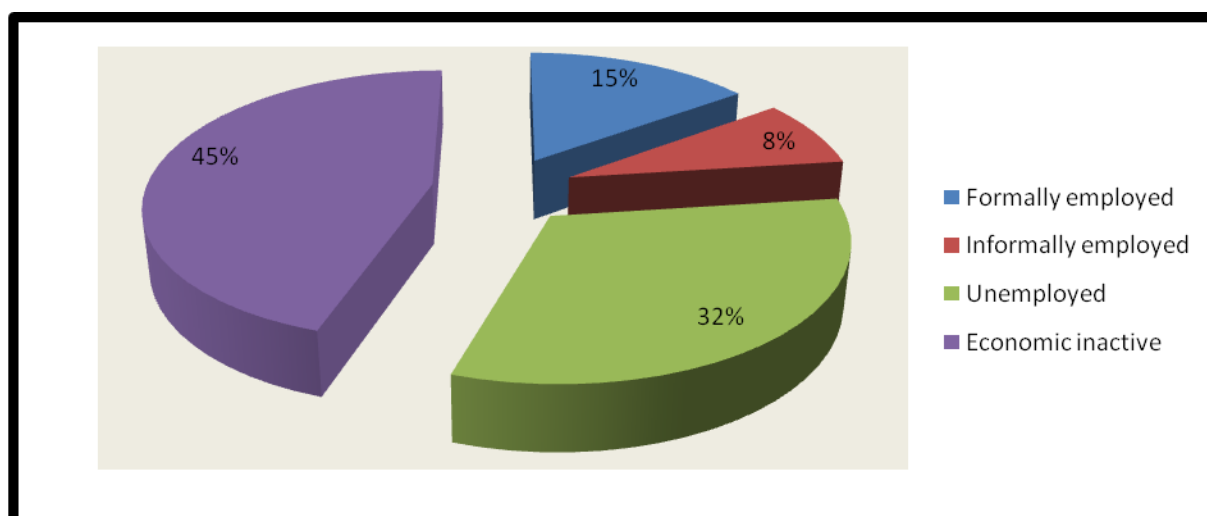
Generally the population in Bophelong is characterised by low levels of education and high level of school drop-outs (those out of school but never reached matric). In the non-poor, moderately poor and very poor households those below grade 12 were 40%, 46% and 52% respectively. An attempt was then made to find the educational status of those out of school at different poverty levels. The picture depicted by **figure 5.12** above shows that there are few people with post-matric qualifications in the township of Bophelong where only 15%, 18% and 8% had a post-matric qualification in the non-poor, moderately poor and the very poor households respectively. In the non-poor households, 18% went up to Grade 12, 40% were below matric and 27% is illiterate. In the moderately poor households, 22% went up to Grade 12, 46% were below matric and 14% were illiterate. The very poor households had 29% having gone up to Grade 12, 52% below matric and 11% being illiterate.

People who are below matric constitute on average 46% of the population out of school. The total percentage of those illiterate and below matric according to the entire survey was 62% indicating that the majority of people in Bophelong do not have the basic education requirement, matric. According to Aitchison and Harley (2006:91) illiteracy is a problem in South Africa even after the democratic government came into play.

5.7 EMPLOYMENT PROFILE

Poverty can be caused by a lack of employment, hence the need to profile the employment status in the township. The economic inactive population are the people below the age of 15-years and above 64-years of age (Department of Labour, South Africa, 2011:iii). The economically active population is therefore the population that is between 15-years and 65-years, willing and able to work. **Figure 5.13** below shows the employment status according to the sample survey. In the figure below, 15% are formally employed and 8% informally employed. The economic inactive population is 45% while 32% of the population is unemployed.

FIGURE 5.13 EMPLOYMENT STATUS



Source: Survey Data

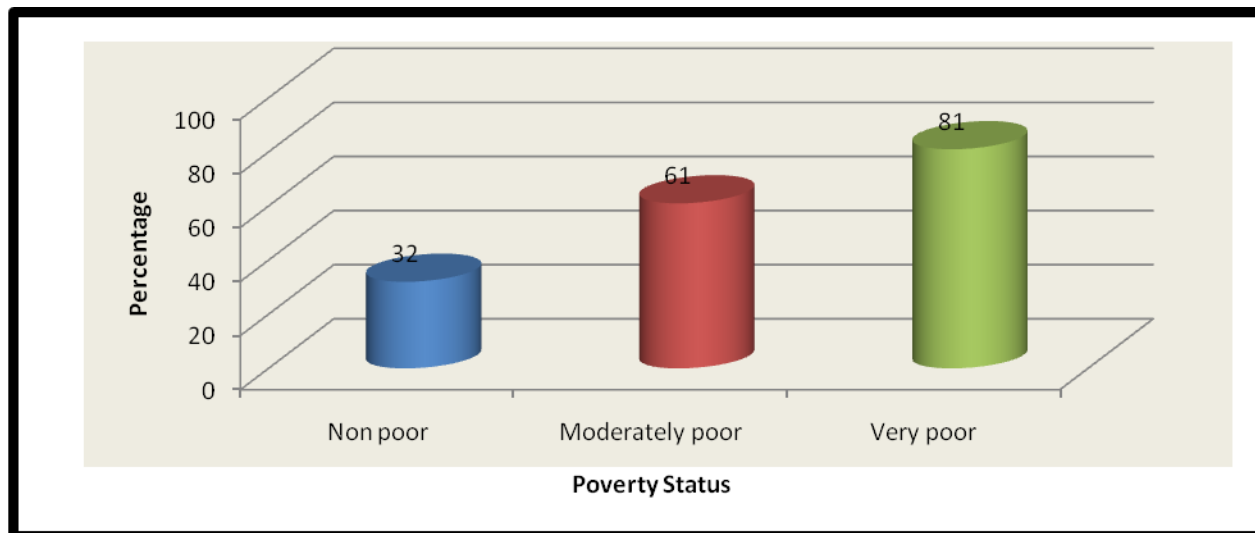
The unemployment rate based on the sampled population was calculated as:

$$\begin{aligned}
 \text{Unemployment rate} &= \frac{\text{Number Unemployed}}{\text{Economically Active Population}} \\
 &= \frac{381}{1200 - 541} \times 100 \\
 &= 57.8\%
 \end{aligned}$$

The unemployment figure above is in accordance with the expanded unemployment definition which includes discouraged workers. These are people who have been unemployed for a long time and have since stopped looking for a job. This figure is high compared to the expanded definition figure for unemployment in South Africa during the same period, thus the first quarter of 2012 which was 36.6% (Stats SA, 2012:1). Mazingaizo (2012:1) notes that unemployment remains a crucial social and economic issue facing the South African labour market. The unemployment rate based on the household poverty status is shown in **figure 5.14** below. In the non-poor households the unemployment rate is 32%. For the moderately poor and the very poor households, the figure was 61% and 81% respectively. Low unemployment rate in the non-poor

households can be due to the fact that these households had mostly economically inactive population, those above 65-years of age.

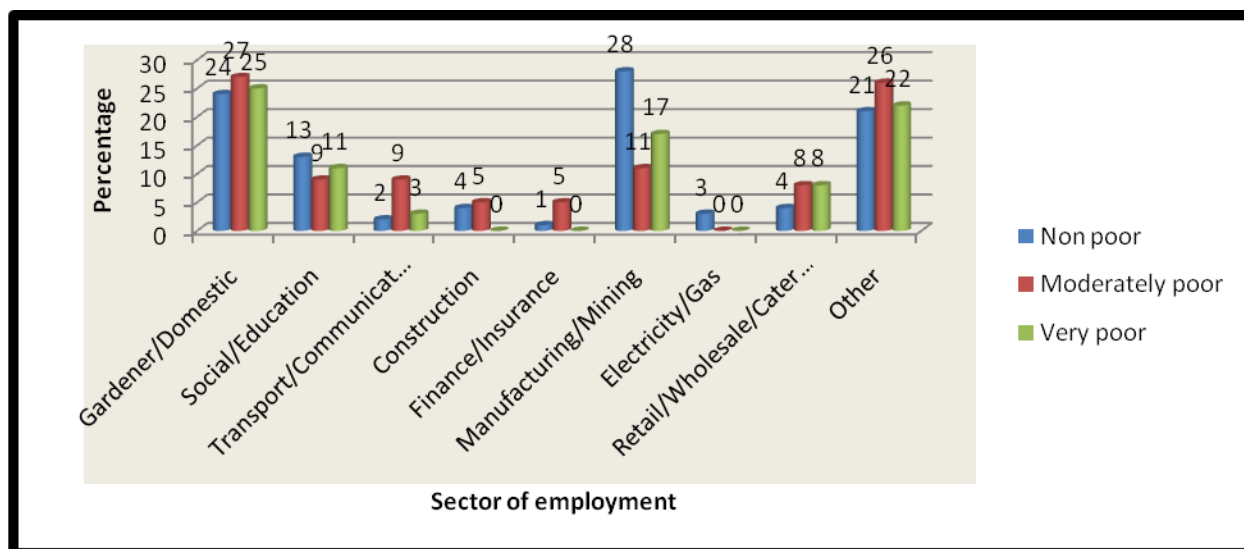
FIGURE 5.14 UNEMPLOYMENT RATE ACCORDING TO POVERTY STATUS



Source: Survey Data

The sectors of employment for those employed are shown below. Displaying the sectors of employment creates a picture of the already occupied jobs in the township. Also, the sector of employment gives a picture of the available economic activities in the area.

FIGURE 5.15 SECTORS OF EMPLOYMENT

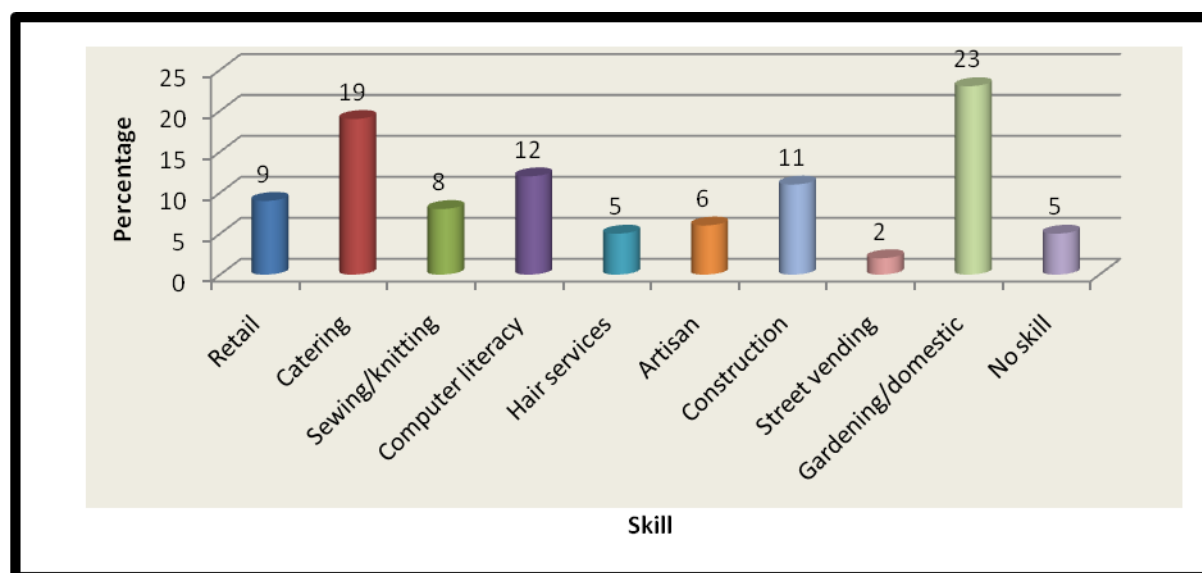


Source: Survey Data

Figure 5.15 above shows the sectors of employment for those employed in the non-poor, moderately poor and the very poor households. The highest percentage of the domestic and gardening comes from the moderately poor households (27%). The non-poor and the very poor households had a relatively high representation of this sector as well with 24% and 25% in the non-poor and the very poor households respectively. These sectors have little or no benefits like medical aid, pension cover and life cover. Most of the employed in the non-poor households, 28% are in the manufacturing and the mining sector. The 'other' includes farming, child minding, sewing and other sectors not mentioned and absorbs 21% in the non-poor households, 26% in the moderately poor households and 22% in the very poor households. According to Stats SA (2012:13) communication and social services employs 21.54% of the labour force in South Africa.

The skills of the unemployed in Bophelong are shown in the **figure 5.16** below. The demography of these skills shows the readily available skills in the township and gives guide to possible business sectors to be launched in the area. The majority of the skill, 23% is in gardening and domestic, followed by catering which is 19%. In the sample, the available skills are on low income sectors where the duration of training is short but access to employment narrow. Computer literacy contributes 12% while building and construction 11%. Some of the unemployed (5%) have no skill at all. These are people who are unemployed but have no specific skill and therefore ignorant of the job they are looking for. This calls for a training need in the township.

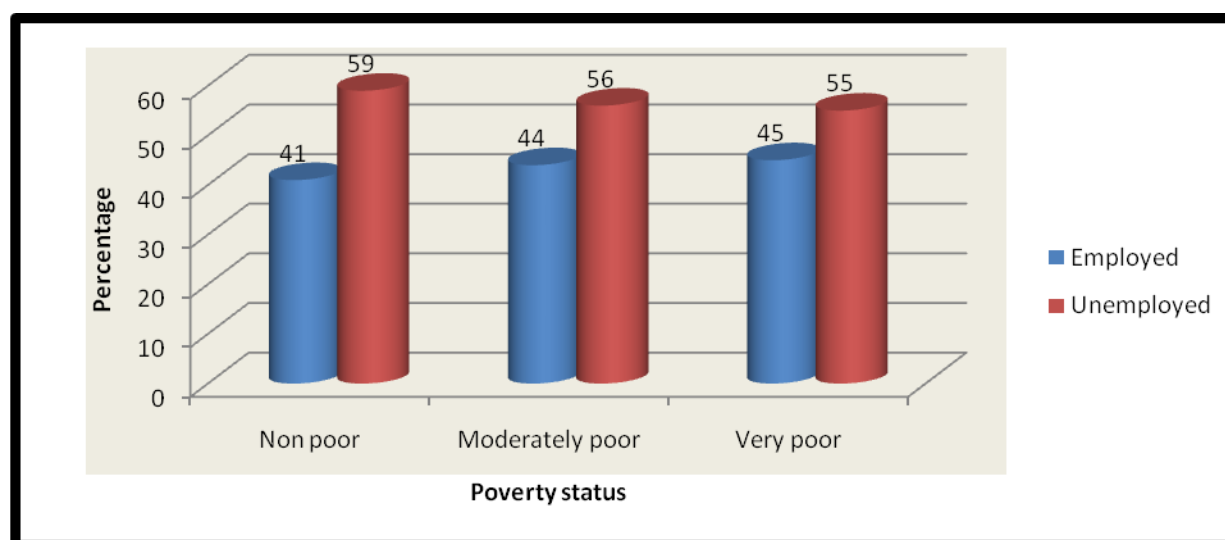
FIGURE 5.16 SKILLS OF THE UNEMPLOYED



Source: Survey Data

The household head is one with the income responsibility in the family. Household heads with no stable income indicate a clear vulnerability to poverty. **Figure 5.17** below shows the employment status of the household heads in the households of different poverty status.

FIGURE 5.17 EMPLOYMENT STATUS OF HOUSEHOLD HEAD

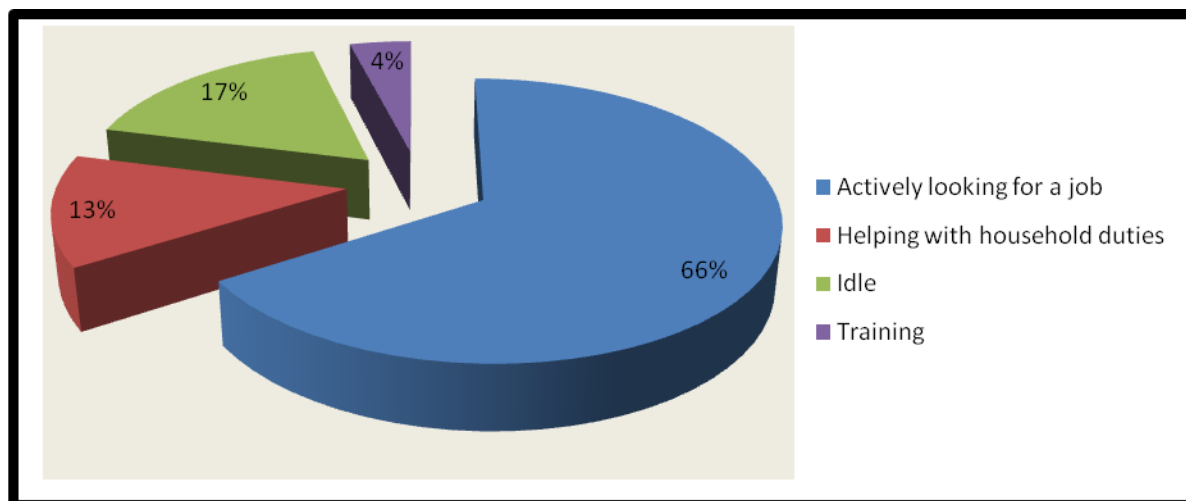


Source: Survey Data

According to **figure 5.17** above, the majority of the household heads in all household types are unemployed. In the non-poor 41% were employed. In the moderately poor and the very poor households the majority of the household heads are unemployed where 56% and 55% are heading the households without any income from employment. This means there is heavy reliance on government welfare income and help from relatives.

The majority of the unemployed in Bophelong are doing different types of activities as shown in **Figure 5.18** below. Of the total unemployed, 66% are actively looking for employment and only 4% have decided to further their skills through training. The rest have since given up looking for a job and they are only helping with household duties or lying idle. This forms the percentage for discouraged workers.

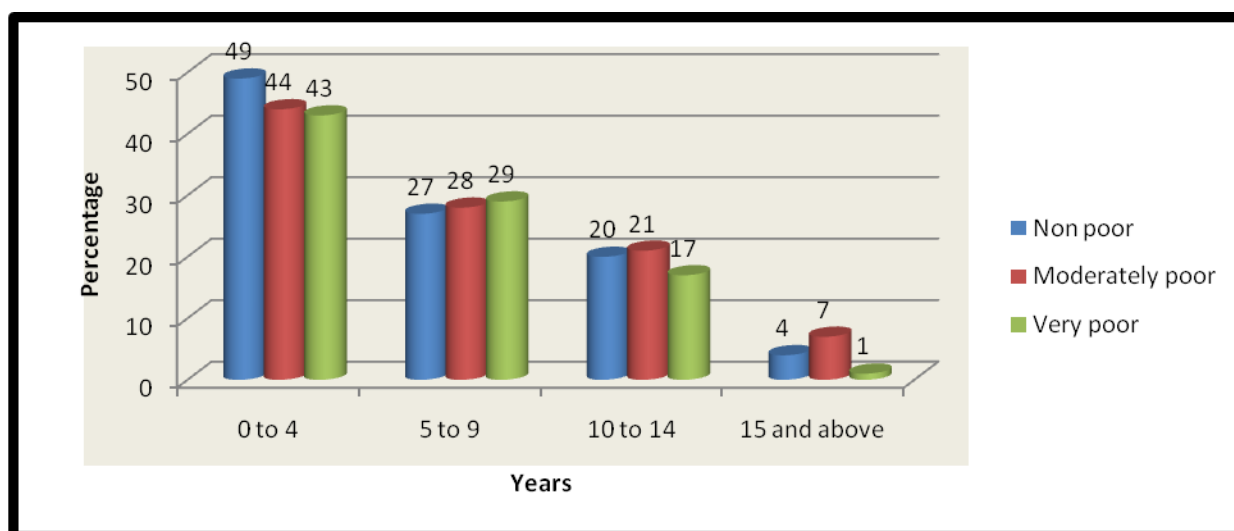
FIGURE 5.18 ACTIVITIES OF THE UNEMPLOYED



Source: Survey Data

The duration of unemployment is the number of years the unemployed has spent without a job. **Figure 5.19** below shows the unemployment duration in the non-poor, moderately poor and the very poor households.

FIGURE 5.19 UNEMPLOYMENT DURATION

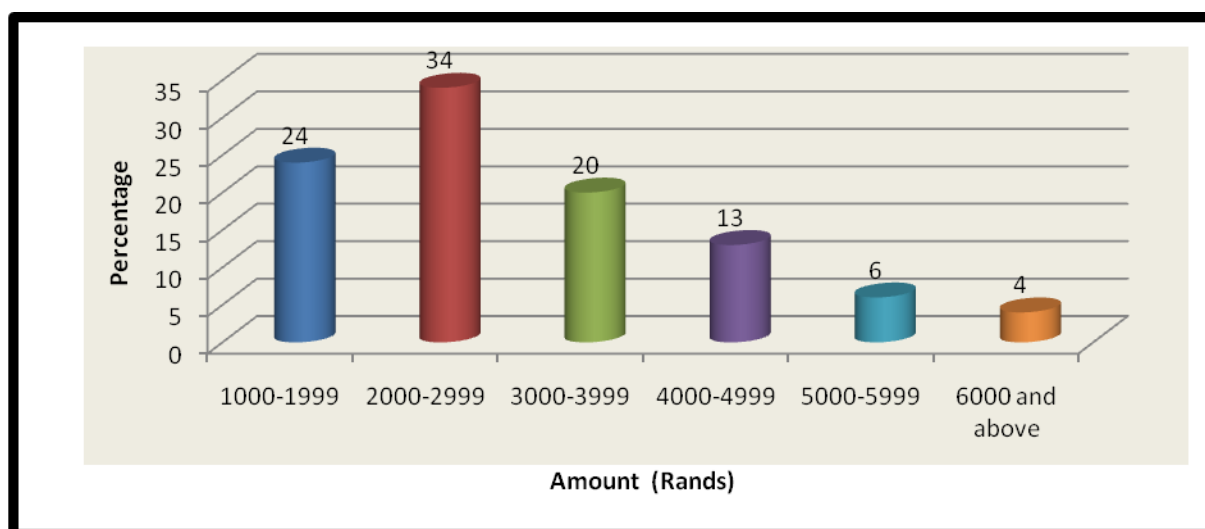


Source: Survey Data

The majority of the unemployed, in all the three economic groups have been unemployed for a period of less than 5-years, being the new entrants into the job market. Those who have been looking for a job for between 5 to 9 years constitute 27%, 28% and 29% in the non-poor, moderately poor and the very poor households respectively. Those with a longer period of unemployment, thus 15 years and above are more in the very poor households. These unemployed might have given up looking for employment.

The unemployed in Bophelong have the amount of wage or salary that they are willing to accept for them to take up employment as shown in **figure 5.20** below.

FIGURE 5.20 MINIMUM WAGE ACCEPTED



Source: Survey Data

Though they had no form of income during the time of interviews, they have a minimum wage that they can accept should they be offered a job. The lowest amount to be accepted for employment in the surveyed sample was R1 000 and the highest amount was R10 000. The results however show that the majority of the unemployed are willing to accept a low income. In the figure, 24% are willing to accept between R1 000-R1 999, 34% can accept between R2 000-R2 999 and this is where the majority falls. Those willing to accept R6 000 and more are only 4%.

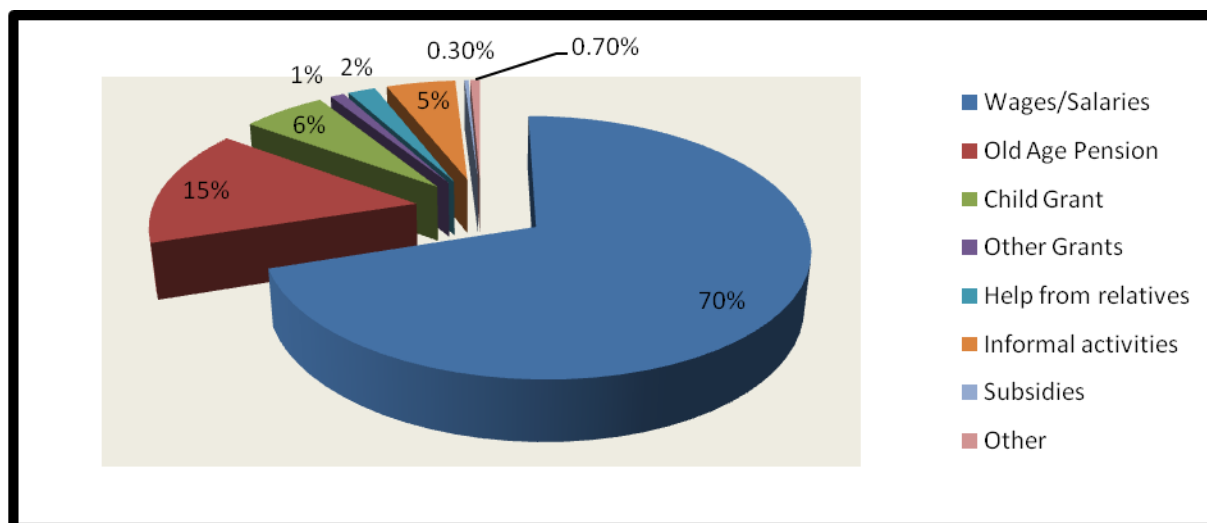
The average income that could be accepted by the unemployed in Bophelong was R2 638 per month. Attempt was made to find the minimum acceptable income from households in the poverty levels. In the non-poor households, this income was R3 195 per month and R2 613 and R2 106 in the moderately poor and very poor households respectively.

5.8 HOUSEHOLD INCOME

The total household income in the sample for Bophelong was calculated at R2 910. Household income ranged from 0 to R13 300 per month. In the non-poor households, the average income level was R6 158 and for the moderately poor and the very poor households the average income was found to be R1 641 and R932 respectively. **Figure**

5.21 shows the tabulation of the income sources and their contribution to the total household income.

FIGURE 5.21 INCOME SOURCES



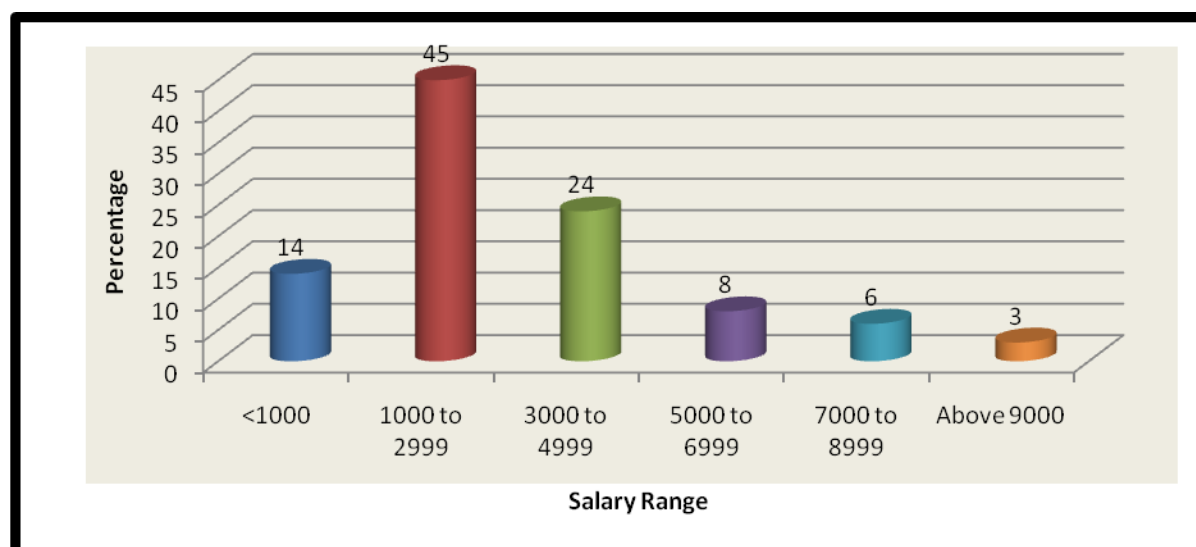
Source: Survey Data

In **figure 5.21** above, wages and salaries contributed the most in the household income. In the sampled population, 70% of the sampled households income in Bophelong was from income from employment, 15% from old age pension and 6% from the child grant. Subsidies and other income sources contributed the least with 0.3% and 0.7% respectively.

5.8.1 Income from employment

The salary ranges of employed individuals according to the sample in Bophelong is shown below. In the survey, 14% received a salary below R1 000 per month. The majority, 45% receive between R1 000 and R2 999 per month. The lowest percentage, 3% earn a salary of R9 000 and above. Although the income from wages and salaries forms the greatest percentage of the income sources in Bophelong, the majority of those employed fall within a lower salary band.

FIGURE 5.22 WAGES/SALARIES RANGES IN BOPHELONG



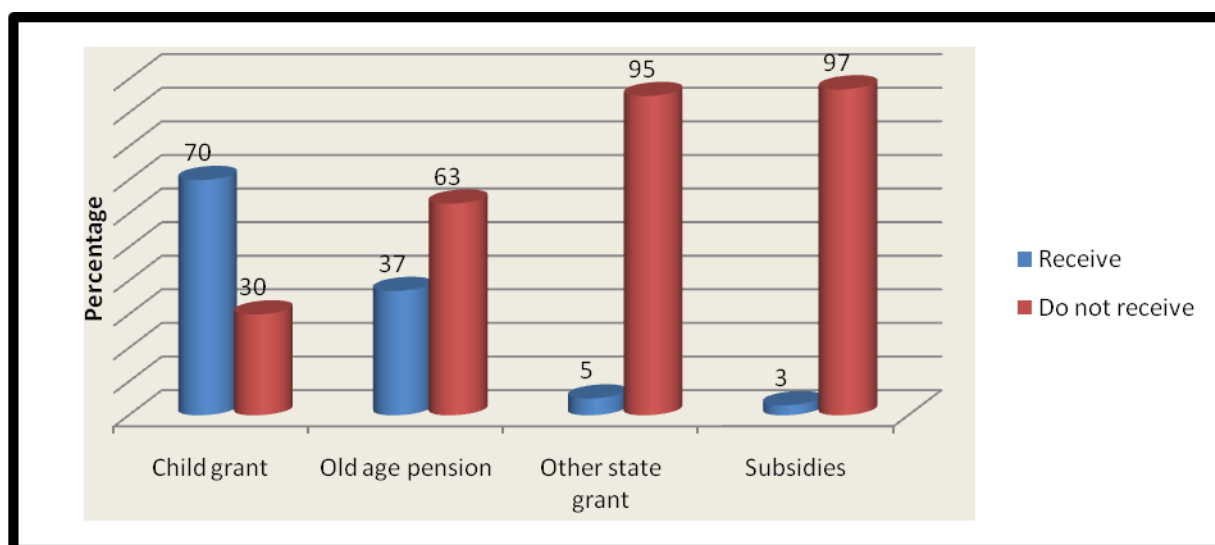
Source: Survey Data

5.8.2 Income from state welfare

In South Africa, the current welfare system was implemented and reformed in stages adapted from the legacy of the apartheid government (Sameson *et al.*, 2006:2). During the apartheid regime, the majority of the social assistance was for the White population and the underprivileged Blacks were minority recipients. The trend has since changed following the election of the post-apartheid government in 1994 where Blacks too started benefiting from the program (Sameson *et al.*, 2006:2).

Information was collected on income from state which included Old age pension, Child Support Grant (CSG), subsidies from the government, and other government grants like foster and disability grants. Many households received more than one income from the welfare. The survey showed that some of these grants have a significant impact on the household income levels and therefore alleviate poverty in the township. The total percentage contributed by the all grants from governments in the sample was 22% (15% + 6% + 1%) of the total household income. The percentage number of households which received state income is shown **figure 5.23** below.

FIGURE 5.23 INCOME FROM THE STATE



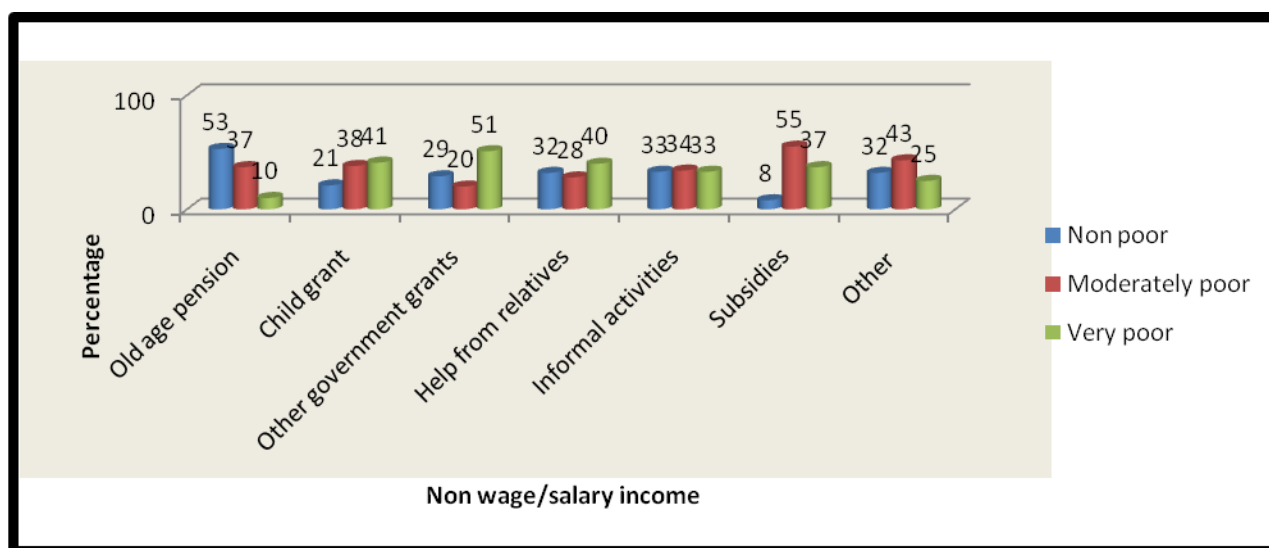
Source: Survey Data

The most common form of income help from the state was the CSG where 70% of the households interviewed had at least one recipient. Of those who received the CSG, 60% received for more than one child. The total amount received as CSG in the sampled population was R56 430. Old age pension contributes R128 130 of the total income in the sampled population and contributes 15% of the income. In the survey, 37% of the households had at least one person receiving the old age pension. Other state grants included all the form of government income like disability and foster care grant. A further analysis showed that 5% of the sampled households were receiving the foster care grant. This grant is given to a child who is removed from their parents and legally placed in the care of foster parents, in terms of the Child Care Act.

Attempt was made to find out the proportion of the non wage/salary income received by the non-poor, moderately poor and the very poor households. The non-poor households received the largest amount of the old age pension (53%) while the moderately poor and the very poor received 37% and 10% respectively. On average, the beneficiary received R1200 per month. This amount is far above the poverty line used in this study. This could be a reason why these households were above the poverty line. The old age pension is therefore a possible means of reducing poverty in the township. The CSG was mostly received by the very poor households. The amount was R270 per recipient

and it failed to lift households above their poverty line since it was far below the poverty line of R584 per capita per month used in this study. Other government grants, together with help from relatives were common in the very poor households where 51% and 40% was received by these households respectively. Income from informal activities was almost shared equally by households. The moderately poor received most of the subsidies and the other non specified income.

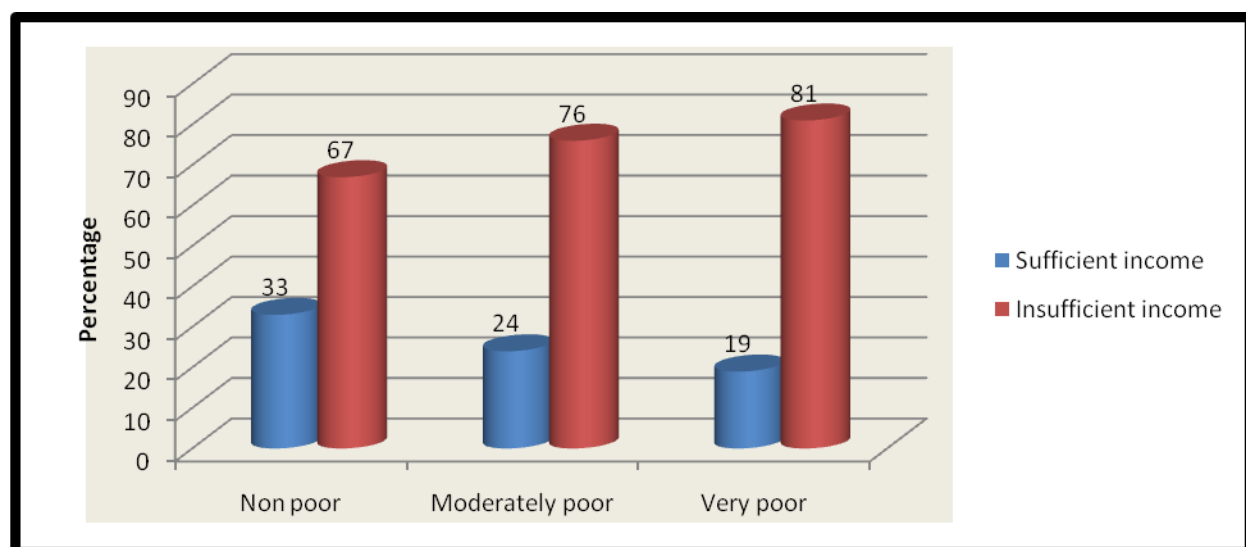
FIGURE 5.24 NON WAGE INCOME ACCORDING TO POVERTY LEVELS



Source: Survey Data

Respondents were asked if they have enough income to support their families. This was done to find households' own perceptions on income poverty. Accordingly, the respondents who indicated that they had insufficient income meant that they saw themselves as poor. Responses to this question are shown below.

FIGURE 5.25 SUFFICIENT INCOME TO SUPPORT FAMILY



Source: Survey Data

This question was posed to respondents asking if they think they had sufficient income to support the household members. Those indicating that they had insufficient income meant that they were poor in terms of the income definition of poverty. In all the economic groups, the majority of the households indicated that their income was insufficient for the household's needs. The majority of the households felt that they were living below their poverty line, even in the non-poor households. This satisfies the principle of non satiation; thus an individual will always desire more. Those who felt that they had insufficient income were 67%, 76% and 81% in the non-poor, moderately poor and the very poor households respectively.

5.9 SUMMARY AND CONCLUSION

In this chapter, the methodology of the study was discussed together with the profile for Bophelong. Information was provided on the household demographic data. The survey showed that 55% of the population in Bophelong was female and 57% of the households were headed by women. The distribution of the household members in the whole of Bophelong showed that there were more mothers, 18% compared to fathers, 13%. There is high level of illiteracy in Bophelong. The survey showed that 40%, 46% and 52% in the non-poor, moderately poor and the very poor households respectively

quit school before reaching the matric level. Also, more than 17% were illiterate in the Bophelong sample survey. In the population still at school, 8% are doing tertiary education while the remainder, 92% have not completed matric. Of those in the formal schooling, 9% are below Grade 3. Those illiterate and out of school constitute 27%, 14% and 11% in the non-poor, moderately poor and very poor households in Bophelong while the majority averaging 47% in the whole sample dropped out of school before completing matric.

Profiling Bophelong revealed the following information:

- 56% of the sample households were found to be poor. This means that 56% of the household had incomes less than their calculated poverty line. Of the total poor, 26% were classified as moderately poor and 30% very poor.
- The poverty gap ratio was calculated at 0.48. This means that on average, poor households had an income shortage of 48% of their poverty line. The average monetary shortfall per household was R1290.18, representing the average amount needed by poor households to make up the difference between average household income and their poverty line. The poverty gap ratio was 28 % for the moderately poor and 69 % for the very poor.
- The average monthly income in Bophelong was R2910. For moderately poor household it was R1641 and R932 for a very poor household.
- The average household size in Bophelong population was 3.96. In the non-poor households, it was 2.97 members while for the moderately poor and the very poor it was 4.2 members and 4.7 members respectively. In the survey 19% of the respondents had stayed in Bophelong for a period less than 10 years.

Unemployment was reported high in Bophelong when compared with the national figures. The calculated unemployment rate was 57.8% in the whole of Bophelong using the broad definition. In the non-poor households, unemployment was 32%. In the households considered moderately poor and very poor, unemployment was 61% and 81% respectively. Those who have been unemployed for a period exceeding 15 years constituted 4%, 7% and 11% in the non-poor, moderately poor and very poor

households respectively. The economically inactive population constituted 45% of the sample. The average minimum amount that could be accepted by the unemployed as a monthly salary, thus the reservation wage was R2638. The non-poor, this reservation wage averaged R3195 per month and the moderately poor and the very poor were willing to accept R2613 and R2106 per month respectively. The high reservation wage among the non-poor could be that these individuals belong to the non-poor households and therefore see no need of accepting low minimum wage since they are not poor.

The wages and salaries contributed the most income where 70% was coming from salary from employment. The second largest contributor was income from old age pension which contributed 15% followed by the child grant with a contribution of 6%. Subsidies contributed the least with 0.3% contribution. Of the employed population, 14% received income less than R1000 and 3% received income above R9000. The majority, 45% were in the salary range of R1000 to R2999 per month.

The most common government grant in Bophelong was the child grant where 70% of the interviewed households had at least one recipient for the child grant. The child grant was most common among the very poor households while old age pension was common in the non-poor households.

Having provided the profile for Bophelong, the next chapter gives an analysis of the poor's expenditure patterns during a period of rising prices. For proper comparison, the non-poor are studied as well. Attention is paid on the expenditure on food, transport, energy and social activities.

CHAPTER 6 THE POOR'S DEMAND PATTERNS DURING RISING PRICES IN BOPHELONG

6.1 INTRODUCTION

Knowledge of demand structure and consumer behaviour when prices continuously change is essential for improvement in nutritional status, poverty reduction, demand planning, macroeconomic policy analysis and food security (Haq *et al.*, 2011:305). The way households' demand patterns are shaped following price rises is missing information in the demand literature in the South African township set up. An analysis of food consumption patterns and how households are likely to change with fluctuations in relative price is required to assess the type of commodities deemed necessities and luxury among certain consumers for policy making.

Prices in South Africa continue escalating due to both external and internal forces. External factors include the global economic crisis which originated from USA at the end 2007 and affected virtually all world economies. Although the recovery process from this crisis has started in most economies, UN (2010:2) comments that this recovery has been uneven and biased towards developed economies. Internal factors include pressure for wage increases, firms' profit motive and rising input costs. The recent inflation and food price trend in South Africa has been shown in **figure 3.1** and depicts that the prices of food and non alcoholic beverages still remain very volatile. This pulls the overall inflation figure up. World Bank (2008:2) further notes that fuel prices are essentially the major culprit in rising commodity prices.

The poor and the non-poor households respond differently to rising prices in their different expenditure patterns (Braun, 2008:20). Research evidence provides that the poor spend a greater part of their income on food (UN, 2012:1; Regmi *et al.*, 2001:14). A rise in food prices therefore makes the poor worse off compared to the non-poor. Also, the magnitude of the impact of a price rise depends on the weight of that commodity in the consumption basket.

This chapter studies the demand patterns of households in Bophelong. This is done by computing the demand elasticities that explain the level of demand for the commodities by a household given the structure of relative prices faced and household income. The correlation between income and total expenditure on commodity items is done using Pearson's Product Moment Correlation Coefficient. Poverty perceptions and how the households have been impacted by the rising prices are shown based on households own perceptions. The responses to rising prices are displayed. Again, the analysis is illustrated for the non-poor, moderately poor and the very poor households where necessary.

6.2 SOCIO-ECONOMIC FACTORS DETERMINING POVERTY

Attempt was made to predict the socio-economic determinants of poverty in Bophelong using the logistic regression model. The objective was to predict factors that make a household to be considered poor or non-poor. Thus, a binary dependant variable was created (Household Poverty Status, poor/non-poor) and the model was run to establish those factors. The selection of these variables was in line with the studies by Mukherjee and Benson (2003:345), Datt and Jolliffe (1999:14) and Coulombe and McKay (1996:1024). Quantitative variables selected were household income, age of the household head, household size and the education level of the household head as measured by the years of schooling. The categorical variables were gender of the household head, employment status of the household head and the marital status of the head coded 0 and 1 as follows:

Gender of the household head	1=Female	0=male
Employment status of the household head	1=Employed	0=Unemployed
Marital status of the household head	1 = Married	0= Not married

The regression model was estimated as follows:

$$HPS = \alpha + \beta_1 HHS + \beta_2 AHH + \beta_3 ELH + \beta_4 HY + \beta_5 HHG + \beta_6 MSH + \beta_7 ESH + \varepsilon \dots 6.1$$

Where:

HPS = is the household poverty status coded 1 = Poor 0 = Non-poor

$\alpha, \beta_1, \dots, \beta_7$ are the unknown estimated parameters

ε = error term

HHS = Household size

AHH = Age of the household head

ELH = Education level of household head

HY = Household income

HHG = Household head gender

MSH = Marital status of household head

ESH = Employment status of household head

The results obtained are displayed in **table 6.1** below.

TABLE 6.1 MODELLING THE DETERMINANTS OF POVERTY

Parameter	B	S.E.	Wald	P-value	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper
HHS	.476	.092	26.740	.000***	1.610	1.344	1.928
AHH	-.058	.012	23.849	.000***	.944	.922	.966
ELH	-.036	.099	.130	.719	.965	.795	1.171
HY	-.0441	.000	9.903	.002***	1.000	1.000	1.000
HHG	.565	.321	3.104	.078*	1.760	.938	3.300
MSH	-.450	.323	1.942	.163	.638	.339	1.200
ESH	-2.070	.342	36.608	.000***	.126	.064	.247
Constant	2.524	.899	7.887	.005	12.484		

Note: * 10% Level of significance, ** 5% Level of significance, *** 1% Level of significance

$R^2 = 0.361$ is the goodness of fit of the model

Source: Survey Data

Table 6.1 presents the results of a logistic regression analysis of poverty status against household size, age of household head, education level of household head, household income, household head gender, marital status of the head and the employment status of household head. The **P-value** is a score test that is used to predict whether or not an

independent variable would be significant in the model. This p-value is considered significant when its value is (0.1) 10% level of significance, (0.05) 5% level of significance and (0.01) 1% level of significance. According to the table above, the household head gender (p-value, 0.078) was significant at 10% and the household income (p-value, 0.002), household size (p-value, 0.000), age of the household head (p-value, 0.000) and the employment status of the household head (p-value, 0.000) were significant even at 99% confidence interval.

The education level of the household head (ELH; $P = 0.719$) and the marital status of the household head (MSH; $P = 0.163$) were all found not to be significant meaning these variables were not independently shields against poverty.

B = This is the coefficient for the constant (also called the "intercept") in the null model. The **B** coefficient was used to determine the relationship between the dependent variable and the independent variable. The parameters which were negatively related to poverty were of household income (-0.0441), the education level of the household head (-0.036), the employment status of the household head (-2.070), marital status of the head (-0.450) and the age of the household head (-0.058). This implies that a rise in the independent variable reduces the poverty. In this case, an increase in household income, increase in the level of education by the household head, employment of the household head and married status of the household head seem to reduce poverty. The household head gender and the household size had positive parameters of 0.476 and 0.565 respectively meaning that their rise causes poverty to rise as well. The positive relationship between poverty and household size is consistent is consistent with studies by Orbeta (2005:18) and Clement and Terande (2012:185) who also found that big households are vulnerable to poverty.

The R^2 is the coefficient of determination, measuring the proportion of variation in the dependent variable being explained by the independent variables. Essentially the R^2 is a statistic that gives some information about the goodness of fit of a model; where the R^2 coefficient of determination is a statistical measure of how well the regression line approximates the real data points within a model. In this model, the dependant variable being explained was poverty. The signs of the coefficients conform to what would

normally be expected. In all, the coefficient of determination ($R^2 = 0.361$) suggests that up to 36.1% of the dependent variable (poverty) is explained by the explanatory variables; as listed in **table 6.1**. This might seem a rather low value, but agrees with Gujarati (2004:91) who purports that in crosssectional data, typically one obtains low R^2 values, possibly because of the diversity of the units in the sample and the existence of various explanatory variables which cannot be possible included in the model.

Exp(B) is the exponentiation of the B coefficient, which is an odds ratio. This value is given by default because odds ratios can be easier to interpret than the coefficient, which is in log-odds units. **S.E** = This is the standard error around the coefficient for the constant. It is used to test whether the parameter is significantly different from 0. **Wald** = This is the Wald chi-square test that tests the null hypothesis that the constant equals 0. This hypothesis is rejected because the p-value is smaller than the critical p-value of 0.1, 0.05 or 0.01. Hence, we conclude that the constant is not 0.

6.3 EXPENDITURE PATTERN

The commodity weight in the household consumption basket was calculated in order to find out which commodities are important in households of different economic groups. This study applied the following formula most commonly used for computing commodity weight for consumption baskets.

$$W_i = \frac{P_i q_i}{m} \dots\dots\dots 6.2$$

Where:

W = commodity weight

m = total expenditure budget

p_i = price for good i

q_i = quantity of good i purchased and

$$\sum_{i=1}^k (w_i) = 1 \dots\dots\dots 6.3$$

Where: w_i = all the commodity weights

Commodity weight measures the weight of a good or service in the total expenditure basket. The reason for investigating the expenditure patterns of different types of households was to discover which households are likely to be affected by price changes of certain commodities.

6.3.1 Total household expenditure

The weight of each expenditure item is shown in **table 6.2** below. There are variations in commodity weights in the consumer basket of the non-poor, moderately poor and the very poor households. The expenditure items reported for the township of Bophelong were expressed as a percentage of total expenditure. This illustration was imperative to expose the importance of each item for the households. The energy item in **table 6.2** consists of different forms of energy that were used by the various households in Bophelong; these included electricity, parafin and coal. For all the households, electricity was the main source of energy. However, the weight of energy in the consumption basket differs from one household to another depending on the household poverty status. Since there is the same supplier of electricity for all the households, whether poor or non-poor, households buy at the same rate in the township. The expense on energy is therefore felt more by the poor households as shown by a high weight in the expenditure basket. The non-poor, moderately poor and the very poor spend 10.4%, 14.9% and 17% respectively on energy.

TABLE 6.2 EXPENDITURE ITEM AS A % OF TOTAL EXPENDITURE

	Non-poor	Moderately poor	Very poor
Housing	0.7	0	0
Water	0.5	0.02	0
Energy	10.4	14.2	17
Food	32	42	53
Cleaning material	2.7	2	1.8
Cigarettes/tobacco	1.2	2	3
Beer/wine/spirit	3	3.5	4.2
Transport	7.6	9	2
Clothing	5.3	2.03	2
Furniture	2	2	1
School	2	1.5	0.9
Entertainment	1.2	0	0
Medical expenses	3.6	1	0.1
Insurance	6.3	9.35	11
Gambling	1.6	0.9	0.3
Savings	8	2.1	0.3
Licensing	2.9	3	1.6
Housekeeping	0.5	0.4	0.3
Communication	5.5	5	3
Car repayment	1.9	0	0
Loan repayment	1	0	0
Other	0.1	0	0

Source: Survey Data

Consistent with the findings of (UN, 2012:1) and (Braun, 2008:20) results indicate that low-income groups allocate a greater portion of their total expenditures on food, compared to high income groups. The percentages spent on food were 32%, 42% and 53% in the non-poor, moderately poor and very poor households respectively (see **table 6.2**). Aliber (2009:15) estimates the national household's expenditure on food to be 32.3% in South Africa

A further analysis was done to determine the average amount spent on food per individual per month in the households. This was done by dividing the total households' food consumption by the number of household members. Results showed that non-poor households had an average consumption of R240 per individual per month on food. The figure fell to R160 in the moderately poor households and to R119 in the households considered to be very poor. Despite the fact that the very poor households spent more than half of their budgets on food, the amount consumed by each individual on food is the smallest. Food expenditure constitutes the greatest weight in the commodity basket in all the households groups and the percentages increase with poverty level. This is a typical expenditure pattern for the poor where food forms the highest expenditure composition in the consumer basket (Duclos & Gregoire, 1998:2).

Table 6.2 further depicts that non-poor households spend little in housing with the moderately poor and the very poor households spending nothing in this item. Other poor people lived in the shacks which were self built and therefore no rent was paid. Also, there is prevalence of the government built houses in the township, commonly known as the (RDP) houses. Driel (2009:130) notes an increase in the RDP houses in the area and as a result few people have bought their houses at market rates. The very poor are reported as spending nothing on water (see 0% in **table 6.2**).

The percentage spent on cigarettes and alcoholic beverages rises with the increase in level of poverty. Despite low income in the township and severe signs of hunger, these households still have some money to be spent on cigarettes and beer. A paradoxical conclusion may be drawn indicating that individuals who consume these commodities do not alter their expenditure for the good even at low income levels. Instead, they reduce consumption of other items like entertainment and savings. It is also indicated that the moderately poor households spend the most on transport (9%), compared to the non-poor (7.6%) and the very poor (2%). The majority in these households were using public transport while in the non-poor households, some had cars as noted in the car repayment expense incurred only by the non-poor households. The reason for the low cost incurred for transport in the very poor households (2%) is that in most cases

the household members do not use any form of transport but prefer to walk. This is done merely to avoid the cost as they cannot afford commuter fares.

The spending on school is generally low, at 2% and less for all the three household classes. There are free schools in Bophelong township where children obtain education for free. The little paid is for stationery and school uniforms. Nothing is spent in the moderately poor and the very poor households on entertainment, car repayment and loan repayment as most of these households do not have access to credit.

Table 6.2 shows a surprisingly notable expenditure on insurance, with the non-poor, the poor and the very poor spending 6.3%, 9.35% and 11% respectively. Nearly all households interviewed were reported paying funeral policy as a form of insurance. The percentage amount spent rises as the poverty level rises. Households are committed to paying their funeral policies. According to Molosankwe (2012:1) many people in low-income brackets save for funerals. This is because their jobs do not have benefits such as a life cover and funeral policy. Many are therefore spending the little they have on burial societies and in most instances, also cover their unemployed relatives. The old poor might be trying to avoid the burdening their children by funeral expenses in the case of death. Another expense is the cost of communication which was 5.5%, 5% and 3% in the respective non-poor, moderately poor and the very poor households.

6.3.2 Food expenditure

Increases in food prices have been a major issue in the recent years globally. The risks related to either unavailability or lack of access to food prompts the need for proper food security. Relative food price changes in the short run remain one of the most important determinants of change in the relative and absolute real income of low-income households. In South Africa, the contribution of food prices to headline inflation has increased quite significantly over the last two decades (Rangasamy, 2010:1). According to Stats SA (2012:1) between 2000 and 2008 the contribution of food-products to headline inflation rose to approximately 1.4 times its weight in the consumption basket. In addition to this, the food and non-alcoholic beverages index seem to be the most

volatile item in the consumer basket, having increased by 1.5% between December 2011 and January 2012 while overall prices increased by only 0.6% (Stats SA, 2012:1).

According to Cantore *et al.* (2012:11) the increases in food prices in many developing nations are mainly due to the fuel price rises and large consumption shares on food and fuel. Stats SA (2012:4) reports that the overall contribution to the annual inflation change in South Africa for food and non alcoholic beverages was among the top three. Housing and utilities, transport and food and alcoholic beverages contributed 1.5%, 1.1% and 0.9% respectively. The annual overall inflation for the same period, June 2012 was 5.5%.

This section of the study analyses the factors that affect the food consumption pattern and the magnitude and direction of these factors. The section seeks to decompose these factors in Bophelong. Determinants were selected in line with the study by Fanning *et al.* (2002:8), Lee and Tan (2006:10) and Davis *et al.* (1983:184). In modeling the socio-economic determinants of food consumption, multiple regression model was used and was coded as follows:

Gender of the household head	1=Female	0=male
Employment status of the household head	1=Employed	0=Unemployed
Marital status of the household head	1 = Married	0= Not married

The model used was as below:

$$FE = \alpha + \beta_1 HHS + \beta_2 AAH + \beta_3 ELH + \beta_4 HHY + \beta_5 GHH + \beta_6 ESH + \beta_7 MSH + \varepsilon \dots \dots \dots 6.4$$

Where:

FE= Food expenditure and is the dependant variable

HHS = Household size

AHH = Age of household head

ELH = Education level of the head

HHY = Household income

GHH = Gender of household head

ESH = Employment status of household head

MSH = Marital status of the head

ε = error term

$\alpha, \beta_1, \dots, \beta_7$ are the parameters to be estimated

A multiple regression model was used contained both the quantitative and the categorical variables. The three categorical variables, employment status, the gender of the household head and the marital status were coded as follows:

Gender of the household head	1=Female	0 = Male
Employment status of the household head	1= Employed	0 = Unemployed
Marital status of the household head	1 = Married	0 = Not married

The regression results are shown in **table 6.3** below.

TABLE 6.3 DETERMINANTS OF FOOD EXPENDITURE

Variable	Unstandardised Coefficients		Standardised Coefficients	t	P-value
	B	Std. Error	Beta		
(Constant)	545.586	134.485		4.057	.000***
HHS	48.709	12.820	.229	3.799	.000***
AHH	2.854	1.599	.112	1.785	.075*
ELH	-37.602	15.925	-.138	-2.361	.019**
HHY	.030	.013	.136	2.336	.020**
GHH	-23.207	50.787	-.029	-.457	.648
ESH	195.754	48.581	.243	4.029	.000***
MSH	76.866	50.612	.095	1.519	.130

Note: * 10% Level of significance, ** 5% Level of significance, *** 1% Level of significance

$R^2 = 0.401$ is the goodness of fit of the model

Source: Survey Data

Table 6.3 illustrates the results of multiple regression analysis of the determinants of food expenditure. The size of the household is deemed to account for the size of the food basket in the household. The inclusion of the age of the household head as a variable in this model is based on the fact that food tastes differ with age. The gender of the household head was selected with the attempt to find out which household type spends more on food; while the employment status of the household head can determine consumption since those household individuals who go to work are exposed to different food items and learning can occur.

Standardised coefficients explain the correlation between two variables resulting from an analysis carried out on independent variables that have been standardised so that their variances are 1. Unstandardised coefficient explain the predicted change in Y given a one unit change in X. In **table 6.3** the standardised coefficients are interpreted. Positive coefficients indicating a positive relationship between the dependent and independent variables were found in the household income (0.136), household size (0.229), the age of the household head (0.112), employment status of the household head (0.243) and the marital status of the head (0.095). Education levels was found to be negatively related to food expenditure (-0.138) and the gender of the household head (-0.29). The P-value shows if the independent variable is significant in explaining the dependant variable. At 99% level of significance were the household size ($p < 0.0001$) and the employment status of the head ($p < 0.0001$). These influence food expenditure significantly because all the p-values are less than 0.01. At 95% level of significance were education level of the head ($p = 0.019$) and the household income ($p = 0.020$) and at 90% level of significance was the age of the household head ($p = 0.075$). The results imply that having a large household size increases the shares spent on food in Bophelong. The gender of the household head and the age of the household head were statistically not significant.

As indicated in section 6.2 above the R^2 measures the proportion of the variance in the dependent variable that was explained by the variations in the independent variables. Total food expenditure is regressed to analyse the explanatory variables listed in the **table 6.3**. The R-squared was found to be 0.401 meaning that the regression model

equation 6.4 as a whole explained 40.1% of the variations in all cases. Like in the previous regression model, the low R^2 in crosssectional data is common (Gujarati, 2004:91). T-value is the coefficient divided by its standard error.

An analysis of variance (ANOVA) is a statistical tool that separates the total variability found within a data set into two components: random and systematic factors (Kutner *et al.*, 2004:23). The random factors do not have any statistical influence on the given data set, while the systematic factors do. The ANOVA test is used to determine the impact independent variables have on the dependent variable in a regression analysis. After the ANOVA test is performed, the researcher further analyses on the systematic factors that are statistically contributing to the data set's variability. In other words the ANOVA test results can then be used in an F-test on the significance of the overall regression. It explains if the model describes the deviations in the dependent variable. The lower this number, the better the fit. Typically, if $Pr > F$ and is less than 0.05 then it means that the model-fit is good for the data set. In this case, the probability value was less than 0.05 at 0.0001 and therefore significant (see **table 6.4**).

TABLE 6.4 THE ANOVA TEST

Model	Sum of Squares	df	Mean Square	F	P-value
Regression	6738285.421	7	962612.203	7.158	.000
Residual	35098799.397	261	134478.159		
Total	41837084.818	268			

Source: Survey Data

The section that follows looks into the composition of the food basket for all three household types.

6.3.3 Composition of the food basket

The food basket of households in Bophelong is shown in **table 6.5** below. The importance of a particular food item in the food basket differs with different households. Accordingly, the very poor households spend most of their income on maize-meal

(19.4%); nearly one-fifth of their income. The percentage spent is more than twice that spent by the non-poor households (8.6%). This could be indicative of maize meal item being a basic commodity for the poor. Expenditure on bread for the non-poor, the poor and the very poor of 18%, 19.2% and 16% respectively and this shows that percentage spent on bread does not follow any trend consistent with households' economic status. There is then lack of consistency and judging if any particular household consumes more or less of it is difficult.

TABLE 6.5 COMPOSITION OF THE FOOD BASKET (%)

Food item	Non-poor	Moderately poor	Very poor
Maize	8.6	15.2	19.4
Bread	18	19.2	16
Meat-chicken	13.2	14	15.6
Meat-beef	13	9.3	6.2
Meat-other	8.1	6.7	7.9
Vegetables	7.6	9.5	9.9
Cooking oil	4.2	5.2	5.9
Sugar	4.1	4.9	5.5
Tea/coffee	2.8	3	3.3
Milk	7.7	5.1	5.8
Rice	4.6	4.1	3.4
Other food items	8.1	3.8	1.1

Source: Survey Data

The table further shows that chicken, being relatively less expensive than beef, is common among the poor households where the very poor spend the greatest percentage (15.6%) compared to the moderately poor (14%) and the non-poor (13.2%). Meat-beef is more common among the non-poor households. This could be because the price of meat-beef is higher than the price of chicken. The composition of other meat differed within households. To the non-poor, other meat consisted mainly of sausages and mince while with the moderately poor and the very poor it composed mainly of chicken feet, bones and intestines. Rice can be considered as a staple food but its expenditure composition falls as the level of poverty rises. Expenditure on cooking oil

and vegetables does not differ much in all the three household types. Contained in the other food items were mostly luxury items which are more prevalent in the non-poor households as indicated by the 8.1% expenditure proportion them.

6.4 MEASURING PRICE IMPACT (ELASTICITIES) ON DEMAND IN BOPHELONG

Recent food price increases reportedly caused significant numbers of households to fall into poverty, particularly in the developing world (World Bank, 2010:1). The analysis carried in this study seeks to account for the impact of price on demand in Bophelong. Demand patterns during raising prices were found using the degree of responsiveness of quantity demanded to price changes. The analysis was done for all the three economic groups to enable investigation for households of different economic status. The responsiveness was calculated using the exponential regression model. The model adopted is of the manner of Wiens (1998:1440) as follows:

$$Y_i^* = \alpha + \beta_1 X_i^* + \varepsilon_i \dots\dots\dots 6.5$$

Where:

$Y_i^* = \ln$ of Y where Y is the quantity demanded of good Y

$X_i^* = \ln$ X where X is the price of good Y

α = a constant and

β = the elasticity coefficient

ε = an error term

\ln = natural log (i.e., log to the base e, and where $e = 2.718$).

This model is linear in the parameters α and β_1 , linear in the logarithms of the variables Y and X, and can be estimated by OLS regression. This formula was used in the calculation of income and cross price elasticity where X^* was substituted for household income and price of another good respectively. This log model has been used several times due to its simplicity in that the slope coefficient β measures the elasticity of Y with respect to X. This is the percentage change in Y for a given (small) percentage change in X (Gujarati, 2004:176).

6.4.1 Price elasticity of demand

The way households adjust their consumption in response to changes in prices is a crucial determinant of the effects of various shocks to market prices. This section utilises household level data on consumption, prices and household economic status to estimate demand parameters for various commodity groups. The recent unprecedented rise in food prices in South Africa prompted the interest in the empirical analysis of consumer demand. The effect of soaring food prices largely depends on the households' demand patterns and the possible substitution effects in consumption. This study implicitly does not assume uniform price-effects to all households but decomposes the effect to non-poor, moderately poor and very poor households.

Demand sensitivity to price changes is measured using elasticities, defined as the percentage change in a good's consumption caused by each percentage change in the price of that good. A negative sign of the elasticity indicates the effect is opposite from the cause. Knowledge of food demand elasticities is useful in addressing three major policy issues as discussed below (Sadoulet & de Janvry, 1995:2).

- It helps policy planners identify which policy interventions are most appropriate in improving the nutritional status of individuals and households.
- It is useful in designing various food subsidy strategies that must be pursued by the government.
- The knowledge on food demand behaviour is essential for conducting sectoral and macroeconomic policy analyses (Sadoulet & de Janvry, 1995:2).

6.4.1.1 Price elasticities for food items

Table 6.6 below shows the presentation of price elasticities on food items. The monthly total expenditure on items was used.

According to micro economic theory, price elasticity of demand is negative in line with the law of demand, except in situations of conspicuous consumption. In **table 6.6** above, most food items have a negative elasticity of demand in all the economic groups. The table is interpreted in line with the traditional theory on elasticity. This theory

ignores the negative sign in price elasticity of demand and states that if elasticity is less than one, thus when demand is inelastic. Demand is elastic if elasticity is greater than one (Parkin *et al.*,2010:97).

TABLE 6.6 FOOD PRICE ELASTICITIES

Food item	Non-poor	Moderately poor	Very poor
Maize	-0.82948	-0.7367	-0.21837
Bread	-0.09321	-0.04828	+0.18577
Chicken	-0.67709	-0.23373	-0.00930
Beef	-0.28693	-0.91424	-1.02541
Vegetables	-0.94331	-0.86778	-0.80933
Cooking oil	-0.89349	-0.80403	-0.80933
Sugar	-0.01939	-1.29929	-1.3480
Milk	-1.37087	-1.61510	-1.03782
Rice	-1.04527	-1.25544	-1.59112

Source: Survey Data

The elasticity for maize-meal is less than one for all the households groups, at -0.82948, -0.7367 and -0.21837 respectively for the non-poor, the moderately poor and the very poor households. This means that a certain percentage change in the price of maize-meal leads to a less than proportionate change in the quantity demanded for maize in the opposite direction. Maize-meal elasticity is high among the non-poor and low among the very poor households. This indicates that this is a staple food for the very poor households and is difficult to substitute due to the high cost of other substitutes. The non-poor can however substitute it for other items like rice.

The results displayed on the elasticity of demand for bread might show some deviations from other past literature. Extreme poverty in some of the households in the sample makes the law of demand usually taken for granted in literature questionable. The very

poor households' demand for bread violates the law of demand where the consumption goes up even when the price rises. This commodity can be classified as a giffen good. Though there is controversy in literature as to the existence of such goods in reality, results of this study indicate that households who suffer extreme poverty can experience giffen goods in their consumption basket. This is however, not the first study to suggest bread as a likely candidate for giffen behaviour. Dwyer and Lindsay (1984:191) propose this possibility for Singapore, and Chen (1994:1769) suggested evidence of positively sloped demand for rice in Taiwan. Bread is however inelastic in the non-poor and the moderately poor households meaning that households do not respond much to changes in the price of bread, though their demand is negatively related to the price movement.

Chicken follows an inelastic demand in all the economic groups and the elasticity coefficient falls with the rise in poverty. The price elasticity of demand for chicken falls as the poverty level rises. In the very poor households, the demand for chicken is almost irresponsive to its price variations. This could be that the substitute for chicken, beef is more expensive. Beef seems to be price elastic among the very poor households with the coefficient of -1.02541. The elasticity coefficient for beef rises with the rise in poverty levels meaning that as households become poor, they substitute beef for other cheap meat products like chicken or other meat. The elasticities for vegetables and cooking oil do not have a great disparity for all the households in Bophelong. Sugar is price elastic among the moderately poor and the very poor households but not among the non-poor households with price elasticity of demand of -1.29929 and -1.3480 in the moderately poor and very poor households respectively. Milk and rice are price elastic in all the households in Bophelong indicating that households can do without these products if their prices continue rising. The price elasticity of demand for rice rises with the poverty level in these household; indicated by the elasticities of -1.04527, -1.25544 and -1.59112 in the non-poor, moderately poor and very poor households respectively.

6.4.1.2 Non-food price elasticities

The following **table 6.7** presents the price elasticities for non food items:

TABLE 6.7 NON FOOD ITEMS PRICE ELASTICITIES

Commodity item	Non-poor	Moderately poor	Very poor
Electricity	-0.69759	-0.79375	-0.87635
Coal	-1.01287	-1.00237	-0.85345
Paraffin	-0.74067	-0.99592	-1.0147
Communting	-0.36577	-0.56530	-0.96182
Beer/wine/spirit	-0.50683	-0.46961	-0.30661
Cigarettes/Tobacco	-0.26789	-0.1031	-0.00302
Washing powder	-0.14761	-0.11188	-0.06234

Source: Survey Data

The non food items' price elasticities are shown in **table 6.7** above. High elasticities may indicate the availability of close substitutes for the commodity. This causes a price rise to result in a large fall in quantity demanded since consumers can shift to a substitute commodity with ease. Coal seems to be having highest price elasticity due to the availability of substitute commodities where its price elasticity of demand seems to be greater than one in the non-poor (-1.01287) and the moderately poor households (-1.00237). Effectively, a marginal increase in the price of coal will lead to a substantial decline in its consumption in these households. Among the very poor demand for coal is inelastic at -0.85345. Paraffin, a substitute of coal reports relatively high price elasticity, of 0.74067, 0.99592 and 1.0147 for the non-poor, moderately poor and the very poor households respectively. The very poor households face an elastic demand for paraffin due to the availability of substitutes.

From the results of the study, beer, wine and spirit together with cigarettes and tobacco were considered to be non food items. Beer, wine and spirit seem to have relatively higher price elasticity than tobacco and cigarettes. The low price elasticity for cigarettes and tobacco can be explained by the addictive nature of the commodity and therefore consumers do not respond much to price changes. In the same vein, washing powder is inelastic in all the households owing to its necessity nature. Among the very poor households, price elasticity for cigarettes and tobacco is nearly zero (-0.00302).

Commuting is more elastic among the very poor households. These households indicated that due to rising commuting cost, they sometimes walk to the nearest town.

6.4.2 Income elasticities

This subsection measures the response of quantity demanded to changes in income.

6.4.2.1 Income elasticities of food items

Generally all items were income inelastic where elasticity was found to be less than one. The responsiveness of quantity demanded was less than the changes in income levels. Under normal situations, when the household income rises, so does the demand for most goods and services, meaning that the income elasticity of demand is in most cases positive. This positive sign in income elasticity indicates that a good is normal and negative sign means that the good is an inferior good. The facts usually approved, in particular that the food income elasticity is less than one was true.

According to **table 6.8** below, all commodity items are normal goods in all households except bread among the non-poor, bearing the elasticity of -0.08178. Normal goods are further classified as luxury and necessities. Luxury goods have income elasticity greater than one while necessities have income elasticity less than one. In all the cases, income elasticity was less than one meaning that a percentage change in income resulted in a less than proportionate change in the demand for goods. Income elasticity for maize meal, a basic commodity especially among the poor falls as the level of poverty rises. This indicates that although a maize meal is an essential commodity, it is more of a necessity among the low income group as indicated by smallest income elasticity of 0.08071.

TABLE 6.8 INCOME ELASTICITIES FOR FOOD ITEMS

Commodity item	Non-poor	Moderately poor	Very poor
Mealie-meal	0.22874	0.11535	0.08071
Bread	-0.08178	0.11599	0.24523
Chicken	0.06680	0.37252	0.68586
Beef	0.11620	0.13143	0.21128
Vegetables	0.16368	0.26345	0.31086
Cooking oil	0.05064	0.21153	0.26347
Sugar	0.11028	0.24824	0.31440
Milk	0.31193	0.24659	0.25516
Rice	0.03190	0.49843	0.13396

Source: Survey Data

Some food items have high income elasticity in the poor households. Such examples are chicken, beef, vegetables, cooking oil and sugar. This means that these goods become less of a necessity as households become poorer. This was the case with most food items in the survey. In the poor households, some items deemed to be life essential become less essential as households move to a even cheaper products. With income elasticity less than one, these items are proving to be necessities in the households.

6.4.2.2 Income elasticities for non-food items

Income elasticities for non food items are shown in the **table 6.9** below. With income elasticities below one all round, commuting, electricity, coal and paraffin appear to be necessities in all households. In the non food items, no item qualified to be classified as luxury where income elasticity was greater than one. Coal was inferior in all households. Among the non-poor, paraffin was also found to be inferior. The income elasticity for

commuting does not show a significant variation among households of different economic groups. Electricity becomes less of a necessity as households become poor.

TABLE 6.9 INCOME ELASTICITIES FOR NON FOOD ITEMS

Commodity item	Non-poor	Moderately poor	Very poor
Commuting	0.40292	0.38349	0.41105
Electricity	0.18845	0.20959	0.23713
Coal	-0.29107	-0.50911	-0.71344
Paraffin	-0.18051	0.26763	0.88382

Source: Survey Data

Changes in the price of a commodity can affect the demand for other related goods. The degree of the effect of the changes in the price of a product on the demand of other products is measured by cross elasticity of demand.

6.4.3 Cross price elasticity of demand

As explained under **Chapter 3**, cross price elasticity can measure either substitute or complementary goods.

6.4.3.1 Cross elasticity for substitutes

Table 6.10 shows the cross price elasticities on substitute goods as per the survey results. Normally substitute goods have positive cross price elasticity. In all the cases in the table below, elasticity is less than one depicting that a change in the price of the good in question results in a less than proportionate change in the quantity demanded of a related product. The relationship between the price of maize meal and the quantity demanded for bread indicates a stronger degree of substitutability among the very poor and very little effect in the non-poor households as shown by the elasticities of 0.69087 for the very poor and 0.06066 for the non-poor. The non-poor substitute maize meal for rice. The change in the price of chicken increases the demand for beef mostly among the non-poor households (cross elasticity of 0.73700), and has very little effect in the demand for beef among the very poor (cross elasticity of 0.00873). This can be explained by the high price differences between the two items. The very poor substitute

chicken for other meat and in their case this was composed of bones, chicken feet and other inferior meat product.

TABLE 6.10 CROSS ELASTICITY OF SUBSTITUTE GOODS

Food item	Substitutes	Non-poor	Moderately poor	Very poor
Maize meal	Bread	0.06066	0.48221	0.69087
	Rice	0.68267	0.04326	0.00244
Chicken meat	Beef	0.73700	0.2768	0.00873
	Other meat	0.42687	0.57211	0.66904

Source: Survey Data

Related goods can be complementary products when are jointly used. **Table 6.11** below illustrates cross elasticities for the selected complementary products in the survey.

6.4.3.2 Cross elasticity for complements

Complementary goods have a negative sign in the calculation of cross elasticity of demand, indicating that a rise in the price of a good will cause a fall in the quantity demanded of a complement product since the two are used jointly. The degree of complementarity according to the survey is small in most cases where the elasticity was way below one. In **table 6.11**, the relationship between the price of maize meal and the quantity demanded for chicken is strong among the very poor (-0.63360). This is an indication that maize meal is mostly used with chicken in these households. For the non-poor households, maize meal price is strongly related to the quantity of beef purchased where the cross elasticity is -0.51810. The relationship between maize meal and the purchase of other meat does not follow a particular pattern among households of different economic groups. This could be the that other meat contained different types of meat among households.

TABLE 6.11 CROSS ELASTICITY OF COMPLEMENTARY GOODS

Food item	Complements	Non-poor	Moderately poor	Very poor
Maize meal	Chicken	-0.27162	-0.47208	-0.63360
	Beef	-0.51810	-0.28756	-0.19820
	Other meat	-0.05555	-0.01822	-0.47816
Bread	Sugar	-0.01038	-0.01052	-0.01892
	Milk	-0.08124	-0.06175	-0.01603
	Tea/coffee	-0.14736	-0.18534	-0.25025
Rice	Chicken	-0.43220	-0.12290	-0.00119
	Beef	-0.33876	-0.10086	-0.02814
	Other meat	-0.01269	-0.00284	-0.00001

Source: Survey Data

Table 6.11 above shows a slight relationship between the changes in the price of bread and the quantity demanded for sugar and milk in all the households. The demand for tea/coffee however, though not so much related to the price of bread holds a slightly strong relationship among the very poor. This relationship rises with rise in poverty in the households. Among the non-poor households, chicken and beef are usually consumed with rice compared to other households. The relationship between the price of rice and the quantity demanded for chicken and other meat is almost insignificant among the very poor households (cross elasticity of -0.00001).

6.5 RELATIONSHIP BETWEEN HOUSEHOLD INCOME AND CONSUMPTION

The Pearson's correlation, typically denoted by r is a measure of the linear association between two interdependent variables. The correlation coefficient gives the value between +1 and -1 inclusively. The value of +1 is obtained in the case of a perfect positive linear relationship and -1 in the case of a perfect negative linear relationship.

As coefficient approaches zero there is less of a relationship. The closer the coefficient is to either -1 or 1 is the stronger the correlation between the variables. If the variables are independent, Pearson's correlation coefficient is 0 (Hintze & Utah, 2007:2).

In the Pearson correlation, the p-value is measured at 10%, 5% and 1% levels of significance. In **table 6.12**, food, transport, communication, clothing, insurance, savings and housekeeping services were significant at 1%. Beer, wine and spirit and medical expenses were significant at 5%. Items significant at 10% were gambling and housing.

If the item is not significant, there is no statistically significant relationship between the two variables. An increases or decreases in one variable does not significantly relate to increases or decreases in the other variable. Where variables are statistically significant, an increase or decrease in one variable significantly translates to increases or decreases in the second variable. Li and Martens (2008:2) warn that when small samples are involved, moderate correlations may misleadingly not reach significance while with large samples small correlations may misleadingly turn out to be significant. Researchers suggest that significance should be reported but perhaps should receive less focus when it comes to Pearson's correlation (r).

The Pearson coefficient is obtained by dividing the covariance of the two variables, by the product of their standard deviations. Pearson correlation is defined only if both of the standard deviations are finite and both of them are non-zero. The table below shows the relationship between total consumption of an expenditure item and total household income. The r -value depicts the Pearson coefficient for expenditure items, p , the probability value and N the number of observations. In **table 6.12** below, all household expenditure items are positively related to income, though the degree of correlation differs with commodity items. A correlation of less than 0.3 is typically considered 'not meaningful', a correlation between 0.3 and 0.5 is typically considered 'weak', a correlation between 0.5 and 0.7 is typically considered 'moderate', and a correlation that is greater than 0.7 is typically considered to be a strong correlation (Ratner, 2001:1).

Items with the highest R -values are housing (0.94941), housekeeping (0.46659) and clothing (0.46118). These are the top three items having the strongest relationship

between income and total expenditure with housing having the greatest correlation. The reason for this could be that high income earners can afford houses at market price while the poor can settle for RDP houses and shacks. This correlation is considered strong. Also, only high income households can settle for the expense of housekeeping while the low income group can do the duties themselves. The three items with the weakest correlation are energy (0.07648), beer, wine and spirit (0.14660) and cigarettes and tobacco (0.16421). Whether a household has low or high income, a form of energy has to be bought. It could be a cheap or expensive form of energy. Beer, wine and spirits and cigarettes and tobacco had a weak association with income probably because of the addictive nature of the products.

Expenditure items which were found significant are marked below the table. Though the expenditure in all items was positively related to household income, some were statistically not significant. These items show a positive relationship between the amount spent on the item and total household expenditure per month. The number of observations differs with the expenditure item. Only 4 households were paying for housing in the sample and 9 indicated that they pay for water. All the households interviewed had food expenditure. Other expenses incurred by most households were energy, insurance and cleaning materials.

TABLE 6.12 PEARSON CORRELATION COEFFICIENTS

Expenditure	r-value	P-value	N
Energy	0.07648	0.2429	295
Water	0.40369	0.2418	9
Housing	0.94941	0.0506*	4
Food	0.40369	<0.0001***	301
Transport	0.27076	0.0002***	185
Communication	0.42965	<0.0001***	194
Beer, wine and spirit	0.14660	0.0355**	73
Cigarettes and tobacco	0.16421	0.15554	68
Furniture	0.16892	0.3247	73
Clothing	0.46118	0.0004***	55
Cleaning materials	0.27677	0.1554	225
School	0.22238	0.1924	36
Medical expenses	0.31683	0.0221**	52
Insurance	0.30391	0.0004***	286
Gambling	0.31432	0.0748*	33
Savings	0.46118	0.0004***	55
Housekeeping	0.46659	0.0071***	32
Entertainment	0.30391	0.2708	15

Note: * 10% Level of significance, ** 5% Level of significance, *** 1% Level of significance

Source: Survey Data

6.6 IMPACT OF RISING PRICES ON SPECIFIC ITEMS

Households were asked to report on how they have been affected by rising prices on their consumption of specific commodities and the data provides some useful insights as shown in **table 6.13**. Most respondents reported severe impact on all commodity items. The most severe impact was reported on electricity price rise where 92% of the interviewed households reported severe impact. The next item with great price impact was food in general where 90% reported that they were highly affected by rising food prices. In both electricity and food, only 1% indicated that they were not affected at all. Overall, 84% said they were severely affected by the rising cost of living generally.

TABLE 6.13 IMPACT OF RISING PRICES ON SPECIFIC COMMODITIES (%)

Commodity item	Severely	Moderately	Slightly	Not affected
Electricity	92	3	4	1
Food	90	5	4	1
Basic	87	8	3	2
General	76	13	9	2
Commuting	70	18	9	3
Overall cost of living	84	11	4	1

Source: Survey Data

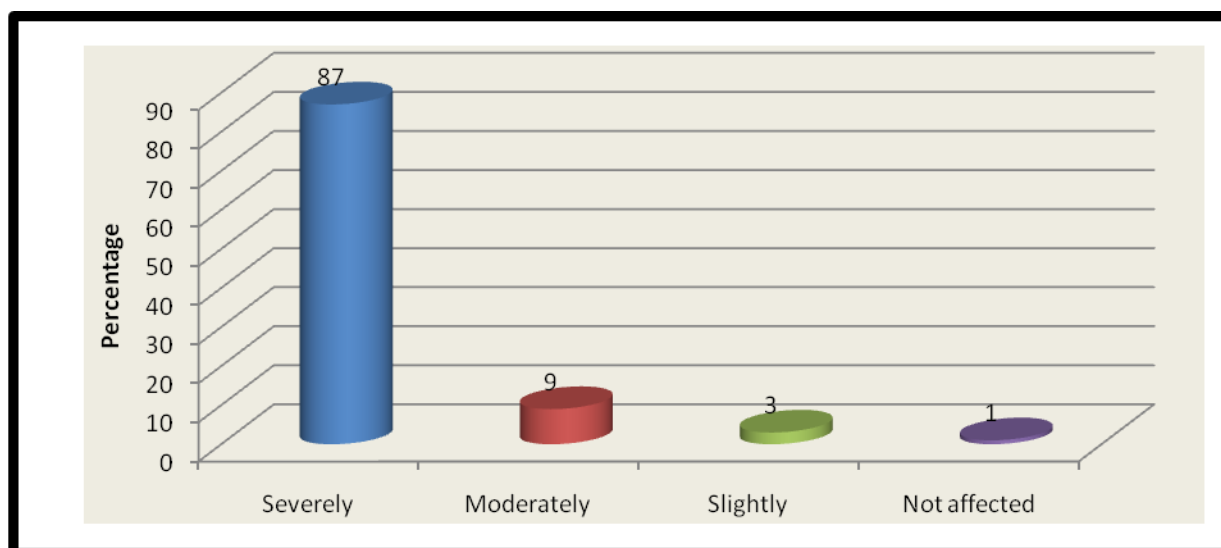
A further attempt was made to find the impact of price rises among households of different economic status. In the very poor households, 95% were severely affected by the rising electricity prices and 97% severely affected by rising food prices. Escalating food prices therefore affected the very poor the most. This indicates that the nutrition of the poor is also at risk when they are not shielded from the price rises. In the case of higher food prices, the poor tend to limit their food consumption and shift to even less-balanced diets, with harmful effects on health in the short and long run (Braun, 2008:2). There is also high dependence on markets in the urban townships because, unlike their rural counterparts, urban dwellers cannot exploit natural resources to

provide food. In this context, food prices and the ability to earn cash income are crucial to the achievement of food security in urban areas.

6.6.1 Overall impact of rising prices on households

Information on the impact of rising prices on households in Bophelong was explored and reported from the households' perspective. Households were asked to indicate how they have been impacted by rising prices in recent months. It was established that rapid increase in prices of goods and services has sent a shockwave through households around Bophelong. Nearly all households in Bophelong are buyers of food; and are therefore directly affected by rising prices. The results of the impact of rising prices on households are shown in **figure 6.1** below. The results show that most households were severely impacted by rising prices where 87% experienced a severe impact and only 1% was not affected. A further analysis of the overall impact of rising prices on the very poor households showed that 96% were severely impacted. Overall, the very poor households were severely impacted by rising prices in Bophelong.

FIGURE 6.1 OVERALL IMPACT OF RISING PRICES



Source: Survey Data

6.6.2 Importance of commodities in the food basket

A question was posed to find out important commodities in the household consumer basket. This was done to get the households' perspective on what should be given a

subsidy in a bid to curb its price escalation and remain affordable. Logically, items poor households consider important in their budgets should be subsidised in production if these poor are to be protected from price inflation. **Table 6.14** shows that maize meal was considered very important by 98% of the interviewed households followed by cooking oil with 94% and meat in general with 89% rating the item very important. None of the households rated maize and meat less or not important. A further analysis was made to investigate the importance of some items in the non-poor, moderately poor and very poor households. Among the moderately poor and the very poor households, 100% rated maize meal and cooking oil very important.

The general picture portrayed is that most of the items in the food basket were considered very important by most households. Among the items rated as very important, milk and bread received the lowest percentage of 64% and 68% respectively.

TABLE 6.14 IMPORTANCE OF COMMODITIES AMONG HOUSEHOLDS (%)

Commodity item	Very important	Moderately important	Indifferent	Less important	Not important
Maize	98	1	1	0	0
Bread	68	17	8	6	1
Meat general	89	9	2	0	0
Vegetables	87	9	3	1	1
Milk	64	8	10	3	3
Cooking oil	94	20	1	1	0
Tea/coffee	70	4	5	0	2
Sugar	73	23	4	1	2

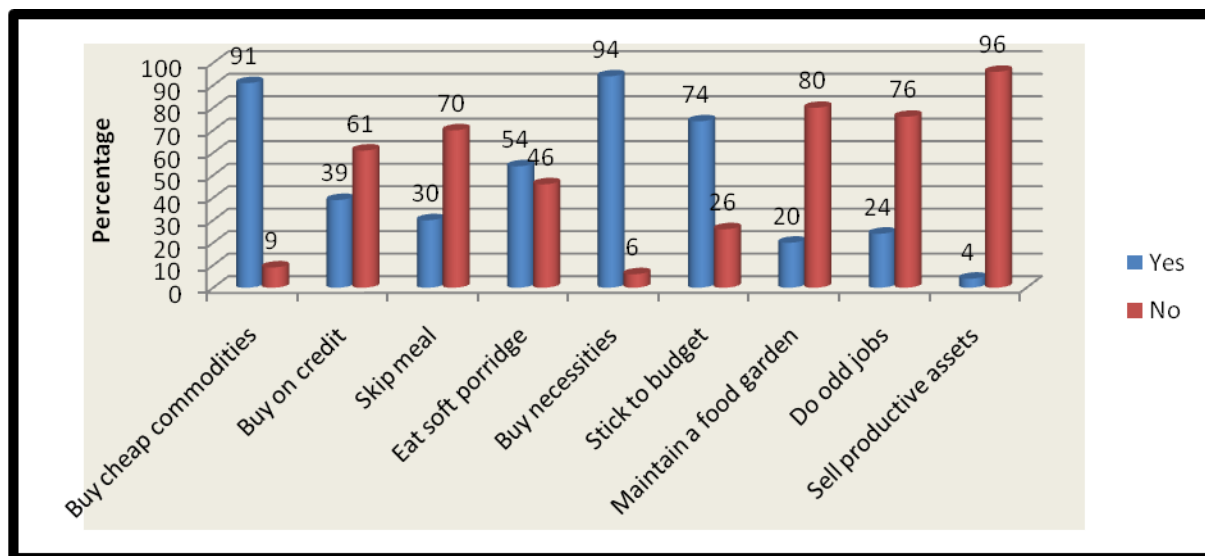
Source: Survey Data

6.7 SURVIVAL MEANS

This section studies the survival means of the households in the Bophelong according to the sample survey. Where necessary, the analysis is made for the non-poor, moderately poor and the very poor. Due to rising prices, households have adopted different means in order to survive or at least cope with the rising prices. **Figure 6.2**

below shows the percentage number of households that have adopted certain means in response to the rising prices. Most households respond by buying necessities (94%) and also purchasing cheap commodities (91%). According to Meenakshi (1996:3266) the shift in the dietary pattern away from nutritious food to cheap products is a consistent change associated with a fall in the living standards in an economy. Results also show that 30% of the households skip meals involuntarily. This was necessitated by the unavailability of food and the need to preserve for future. To some, it had become a habit where they usually had breakfast late so that they can skip lunch. Bauer (2008:8) notes that during hard times, poor households consume only one or two meals per day. This however causes the children in these households to suffer malnutrition and other food deficiency related diseases (Bae *et al.*, 2008:1). The majority of these households do not do any food gardening but instead, they buy vegetables. In the survey, only 20% had food gardens. The odd jobs include car cleaning, car watch and any type of a job that can be available.

FIGURE 6.2 HOUSEHOLD RESPONSE TO RISING PRICES

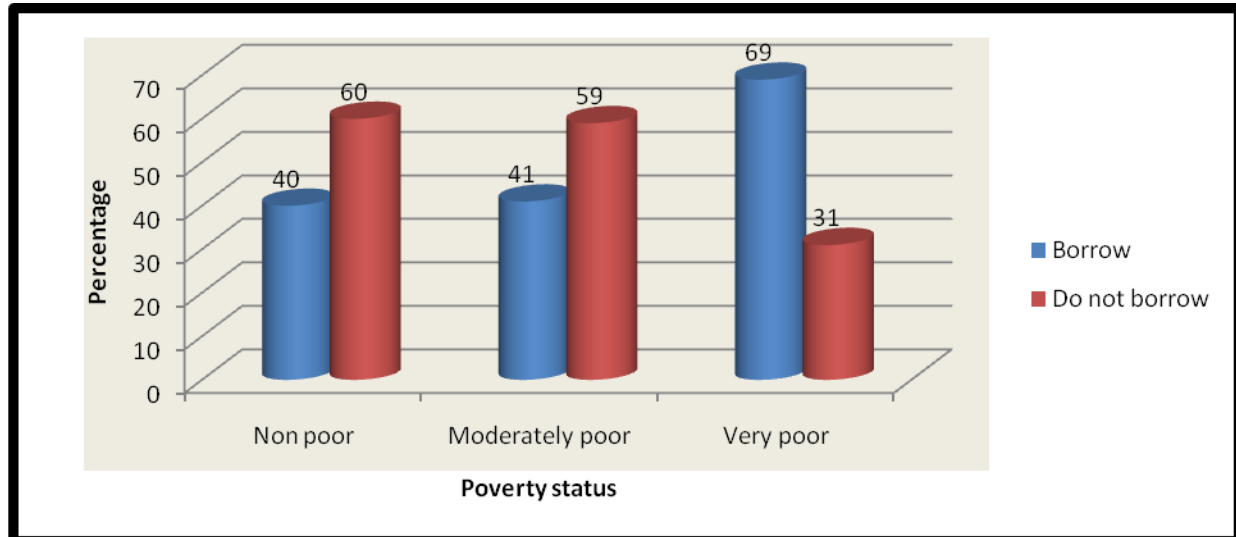


Source: Survey Data

During times when there is not enough food, households indicated that they borrow food from neighbours. The items normally borrowed included sugar, mealie-meal and salt, thus pure basic foodstuff. The majority of the households borrow from neighbours.

Figure 6.3 shows that generally most households borrow from their neighbours in Bophelong.

FIGURE 6.3 BORROW FOOD FROM NEIGHBOURS



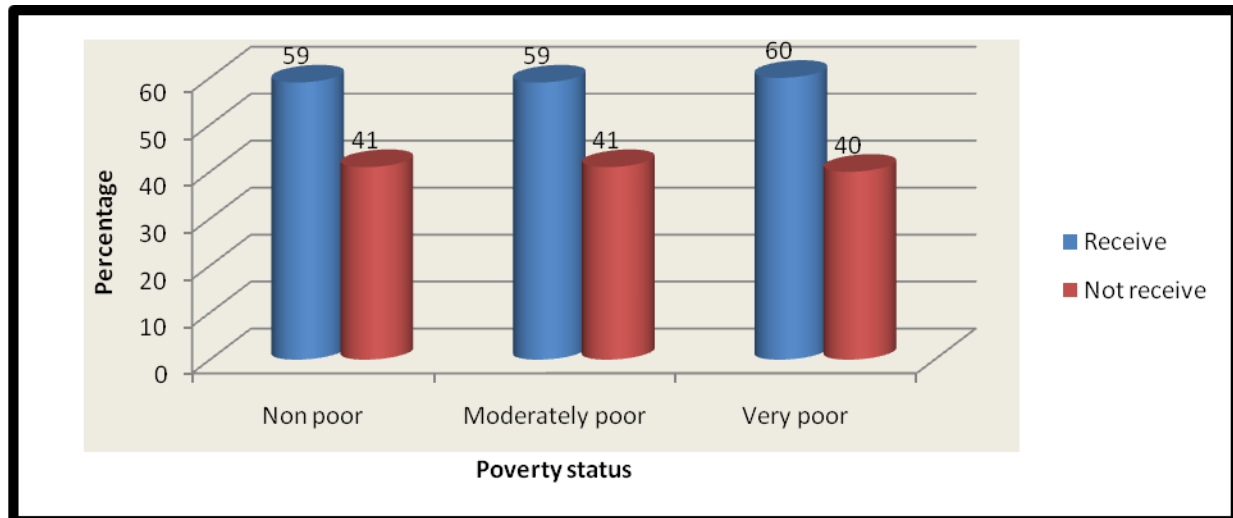
Source: Survey Data

This borrowing is however common among the very poor households where survey showed that 69% of the households sometimes survive by borrowing. Of those who borrow in these very poor households, the majority 64% indicated that they do not return the borrowings. The most cited reason for not returning was that it takes a long time to acquire that stuff and they end up forgetting about the borrowed food.

Villarreal and Shin (2008:1) cite that many poor households receive more extended family support than the non-poor households. The socio-economic contribution of the individual outside the nuclear family compensates for the low income in these households. **Figure 6.4** below shows the number of households that received extended family support in all the economic groups in Bophelong. The income from extended family is common in all the groups as shown below. There is no group that can be said to receive more than the other, but on average the number of households that receive in each economic group is almost the same. The help was usually from elder children who had their own families, and in young households, help was coming from parents.

Some respondents mentioned that though they would want to ask for help, they were shy and feared gossip.

FIGURE 6.4 EXTENDED FAMILY SUPPORT



Source: Survey Data

6.8 SUMMARY AND CONCLUSION

The chapter's prime objective was to find out the demand patterns of households in Bophelong when prices go up. This was done by calculating the elasticities of demand. The data was divided into three groups so as to take a closer look at demand responses in the households of different poverty levels. The determinants of poverty and of food consumption in Bophelong were modeled and the households' perceptions about rising prices were done. The correlation between the household income and the expenditure on goods and services was done as well.

Variables were selected that were presumed to be possible causes of poverty in Bophelong. Household size, age of household head, household income and the employment status of the household head were found significant in determining poverty in Bophelong. On the other hand, household size, age of the household head, education level of household head and the employment status of the household head were found to be significant in determining food consumption patterns in Bophelong. The proportion of each expenditure item was expressed as a percentage of total expenditure in order to

determine the weight of each item. The percentage spent on food was rising with the level of poverty where 32%, 42% and 53% was spent in the non-poor, moderately poor and the very poor households respectively. Also the percentage on cigarettes and tobacco, beer, wine and spirit and insurance, which was mainly funeral contribution, was rising as poverty level rose. In the food basket, maize meal and chicken meat carried the largest weight in the very poor households. In the moderately poor households, bread and maize had the larger weight while in the non-poor, chicken and bread had the greatest weight.

Price elasticities were measured and bread was found to be giffen in the very poor households. Maize meal price elasticity was -0.82948 in the non-poor households and was falling as poverty rose. The quantity demanded for beef was price elastic in the very poor households but inelastic in the other households. Milk and rice were elastic in all households meaning that these items were deemed luxuries.

With the non food items, demand for coal was found to be elastic in all types of households except the very poor households. Price elasticity for electricity, commuting and washing powder was below one in all households. This indicates that these items were necessities and therefore did not respond much to price changes. Cigarettes and tobacco and beer, wine and spirits were price inelastic. Income elasticities for food items were done and bread was found to be inferior among the non-poor households, with negative income elasticity. All food items were income inelastic. For the non food items, income elasticity showed that coal was inferior in all households and paraffin was inferior in the non-poor households.

The degree of substitutability between related products was done using cross elasticity. Cross elasticity of maize meal was high among the very poor where it was 0.69087 and 0.06066 among the non-poor. Substitutability was high between maize meal and rice among the non-poor (0.68267). Chicken and beef are more substituted among the non-poor while the very poor substitute chicken with other meat. There was stronger complementarity between maize meal and chicken among the very poor households compared to other household groups while beef and maize meal were used together

among the non-poor. A weak relationship between the quantity demanded for bread and the prices of sugar and milk was found in all households. There was early no relationship between the price of rice and the quantity demanded for chicken and other meat among the non-poor.

The relationship between household income and total expenditure on each item was investigated using the Pearson correlation coefficient. All expenditure items were positively related to income, though not all were significant at 5% confidence interval. Food, transport, communication, clothing, medical expenses, insurance, savings and housekeeping, beer, wine and spirits were all positively related to income and significant at 5% level of confidence.

Households indicated that they have been severely affected by the rising prices with the very poor households having been mostly affected by rising food prices. All households in the very poor indicated that maize meal was the most important food item. Different survival means have been adopted in Bophelong in response to price rise and these included buying cheap commodities, sticking to necessities and maintaining food garden. The next chapter gives a study summary, draws conclusion from the study and makes recommendations based on the study results.

CHAPTER 7 SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1 INTRODUCTION

The prime objective of the study was to investigate the demand patterns of the poor from a household point of view when prices rise. The demand patterns of the poor were presented in the form of elasticity and households were divided according to their economic status, thus non-poor, moderately poor and very poor. The rationale for the division of households in these categories lay on the fact that the demand patterns of the poor differ from those of the non-poor. Also there is a difference in the expenditure pattern of a household receiving no form of income at all and that which is near its poverty line, hence a further division of the poor into moderately poor and very poor.

A theoretical background on the concept of poverty, inflation and demand was provided. Survey was carried and the survey results presented. This chapter gives a summary of the thesis and draws some conclusion based on the study outcome. Recommendations are made that attempt to reduce the impact of rising prices on the poor and malnutrition caused by escalating food prices.

7.2 SUMMARY

The summary of the study will follow the study outline where firstly the theoretical summary will be done then the empirical summary.

7.2.1 Theoretical summary

Poverty is a contested term and the debates around poverty go beyond the academic spheres. Different organisations and researchers define the term differently. The definitions of poverty depend on the study objectives, type of research and the place where the research is carried out. Due to lack of a proper definition of poverty, there is controversy in its understanding since it has a series of contested definitions that at times contradict each other. However, a uniform definition of poverty is important for proper measurement, as well as the use of an appropriate poverty reduction strategy.

The first proper documentation on poverty research was done by Rowntree (1901). Many researchers then emerged lining their research with his discovery. Entities and individuals that have shown interest on the subject of poverty include World Bank, UN, FAO, UNICEF, UNESCO, ILO and WHO among others. In South Africa, poverty records date back to before the democratic government where the prime focus was poverty among Whites. After the democratic government of 1994, poverty research became less inclined and followed the international standards. Recent studies indicate that poverty in South Africa is still rooted especially in the rural areas and townships.

Various schools of thoughts exist on poverty definitions. Those discussed in this study are absolute, relative, social exclusion, income, capability, human scale development and participatory approaches. Absolute approach defines poverty in terms of failure to meet basic needs. Relative poverty is based on comparison with a reference group. Social exclusion sees poverty as failure to participate in the general society due to segregation. The inclusion of social exclusion in the definition of poverty explains a wider notion of poverty where the narrow definition merely explains poverty as a lack of sufficient income necessary for living. The income method views poverty in terms of lack of sufficient income to meet basic needs. Capability approach defines the poor as those who fail to have certain capabilities like attaining the minimum for survival. The UN views poverty in terms of human scale development and uses education, life expectancy and income levels as poverty indicators. Each definition contains a part of truth but no single definition holds the full truth in defining poverty.

The uncharacteristic nature of poverty makes it complex to measure by means of a single measure, giving rise to various ways of measuring poverty. Measures of poverty discussed in this study are the poverty lines, head-count index, poverty gap ratio, dependency ratio, Foster-Greer-Thorbecke index, Sen-Shorrocks-Thon index and the Watts index. They all yield different result, hence the subjective nature of poverty. Specifying a poverty measure is not a simple task. Indeed, many conceptual and methodological issues are addressed before specifying any poverty measure and these include individual welfare indicators, who is really poor and synthesising the information describing the poor population into a poverty measure. Past researchers dealing with

these questions point out that it is often hard, if not impossible, to find a consensus on the process yielding an appropriate poverty index.

It is necessary to identify the causes of poverty in order to devise appropriate means of fighting it. The causes are diverse and peculiar to certain individuals and economy. Research indicates that it is mostly concentrated among, children, women, rural areas and the sick and the disabled. A theoretical background of urban poverty was provided. Urban poverty research indicates rising levels of urban poverty which cannot only be attributed to population growth but to urbanisation as well. The study on poverty therefore has a long way.

Inflation, also covered in this study carries several perceptions to different individuals. The general acceptable definition is a situation where the general price level in the economy is rising. Although the definitions may differ, there is unanimous concession that inflation is undesirable in the economy. Inflation can be caused by the increase in the cost of production, increase in money supply, political and structural factors and increase in any of the components of aggregate demand. An increase in the cost of production, probably due to a rise in wages or the cost of raw materials triggers an increase in the prices of goods and services. This rise in the price of goods and services prompts the trade unions to demand an increase in wages. This gives rise to a wage-price spiral. On the other hand, an increase in the cost of production in one economic sector can spill over to other sectors causing an overall inflation in the economy. Monetarists argue that inflation is a pure monetary phenomenon caused by an increase in money supply. Structuralists argue that inflation is caused by pure political and social factors that negatively publicise the economy. Economic structural adjustment programmes can also trigger inflation. Lastly, the Keynesian economists believe that inflation is caused by any an increase in any of the components of aggregate demand accompanied by a rigid aggregate supply.

Many methods exist that attempt to measure inflation, yielding different inflation rates. The most common used index is the CPI. The indexes discussed in this study are:

- CPI which considers the consumer basket of goods and services in the base year and compares it with the current period. CPI is used in the calculation of inflation rate in South Africa.
- Laspeyres index measures the price increases which are weight by quantities in base year. Some authors argue that the CPI is an example of a Laspeyres.
- PPI gives different results from the CPI due to subsidisation, profits and taxes.
- Paasche price level index measures how much the basket in the current period would have cost in the base year.
- Fisher index is then a geometric average of the Laspeyres and the Paasche index. It is the square root of their product and therefore eliminates the bias associated with each.
- IPI represents the ratio between the current GNP to constant GNP
- GDP deflator is a broader price index encompassing all the goods in the GDP and estimates current prices to constant prices.

Inflation results in the loss of purchasing power, reduction in investment, price distortions and income redistribution. Not everybody is made worse off by inflation but some groups gain and others loose. Inflation increases both poverty and inequality which can result in malnutrition and even death especially among children. Precautions to guard against the negative effects of inflation include rent seeking behaviour, hoarding, practice of real interest rates, price fixing, enlargement of safety nets, food stamps and nutrition programmes. A situation where prices continuously fall is called deflation and is also undesirable because it causes uncertainty and consumers tend to postpone spending in anticipation of a further price fall.

Since the rate of inflation causes uncertainty in the economic atmosphere, economic agents have some expectations about inflation trends. These expectations can be based on the rationale, adaptive or static expectations. The rationale expectation theory

assumes that economic actors look reasonably and do not respond to immediate price shocks. In the adaptive expectation, there is backward looking behaviour where expectations are based on what they have been in the past. Static expectation is when the expectations remain the same.

South Africa has always had unstable inflation figures even during the apartheid regime. The South African Reserve Bank has decided to make inflation its top priority through the inflation target policy framework. The inflation target was announced in 2000 and was to start in 2002. A good policy though it can be, it has at times failed to keep inflation within its band especially during the global economic crisis. Commodity prices, especially food prices have been very volatile in South Africa due to both escalating fuel prices and increases in the cost of production.

For the consumers to demand goods in the market there should have the ability to purchase. This has been analysed under consumer theory and demand. The demand curve slopes downwards from left to right to satisfy the law of demand. Three types of demand curves were discussed namely the Marshallian (uncompensated) demand curve, the Hicksian (compensated) demand curve and the Slutsky demand curve. The Slutsky demand curve introduces the decomposition of income and substitution effect. Income effect can either be positive or negative depending on whether the good is normal or inferior while substitution effect is always negative.

Elasticity of demand measures the degree of responsiveness of quantity demanded to changes in the price of a good, price of related goods and the consumer income. It shows by how much quantity demanded responds to changes in any of the above factors. The price elasticity of demand coefficient is usually negative for most goods, but in rare cases of giffen goods, this figure can be positive. Income elasticity coefficient is positive for normal goods and negative for inferior goods. Substitute goods have positive cross price elasticity coefficient and complementary goods a negative cross price elasticity coefficient. Unrelated goods have zero price elasticity.

Certain demand behaviour, conspicuous consumption does not obey the law of demand. Some consumers buy goods so that they are considered unique and

consumption is based on status. According to the bandwagon effect, consumers demand goods because others are demanding the same good and therefore they want keep up with the rest. Snob effect explains a demand situation where people cease to consume a commodity because others are consuming the same commodity. Veblen effect explains that demand can rise because the price of a good has risen. This explains the exclusive nature of some consumers.

Consumers demand goods to get the satisfaction (utility) from consumption. The main aim is to maximise this satisfaction subject to prices and income. The combination of goods and services that yields the same level of satisfaction to the consumer can be shown by an indifference curve. A locus of indifference curves drawn on the same graph is called an indifference map. Higher indifference curves are preferred since they yield a higher level of satisfaction. A change in a relative price of a good causes the budget line to shrivel and its slope changes. This causes consumers to buy less of that good that has become dearer.

In this study, consumer welfare was explained by the consumer surplus, equivalent variation and compensated variation. Consumer surplus is the difference between what the consumer is willing to pay and what is actually paid. Equivalent variation explains the income to be taken away from or to be given to an individual to make him equivalently worse off or better off following a price change. Compensated variation explains the income needed to compensate an individual following a price change so that same utility is maintained.

7.2.2 Empirical summary

The study pioneered 315 questionnaires and 301 were correctly completed. The majority of the questionnaires, 56% were answered by the head of the household. After the completion of the survey, data was edited, entered in the spreadsheet and cleaned. Frequencies were extracted from the data.

The poverty line used in this study was R584 per capita per month. Using this poverty line, poverty rate was calculated at 56% of the sampled population. A further division was done on the poor to get the moderately poor and the very poor. The moderately

poor were defined as those whose household income was between 50% - 99% inclusively of their poverty line. The very poor had income between 0% - 49% inclusively of their poverty line. Under this categorisation, 26% of the households were classified as moderately poor and 30% as very poor in the sampled survey.

Poverty head-count and the poverty gap ratio were used to a measure poverty level in Bophelong. The poverty gap index was calculated at 0.48, meaning that on average, poor households have an income shortage of 48% of their poverty line. The average monetary shortfall per household was calculated at R1 290.18, representing the average amount needed by poor households to make up the difference between average household income and the poverty line. A further analysis was made to calculate this poverty gap ratio in the households of different economic status. The poverty gap ratio was 29 % for the moderately poor and 69 % for the very poor in Bophelong. The average monthly income in Bophelong was R2 910 per month. For the moderately poor household it was R1 641 per month and R932 for a very poor household.

Demographic information for Bophelong was shown. According to the survey, 55% of the population in Bophelong was female and 57% of the households were headed by women. An enquiry on the marital status showed that 25% of the of the sampled population was married, 9% widowed, 6% staying together and 32% children who were never married. Most of the residential houses in sample (80%) were built by the RDP programme, 12% old Bophelong and 8% shacks. Among the respondents, 48% had stayed in Bophelong for a period less than 15 years while 6% for more than 60 years.

The population composition showed that the majority of the young population, below the age of 5-years was from poor households. In the non-poor households, 4% of the total population was aged below 15 years. In the moderately poor and the very poor households, the population below 15-years was 24% and 28% of the whole sample respectively. The population above 65 years of age was 20% in the non-poor, 8% in the moderately poor and 1% in the very poor households.

There is high level of illiteracy in Bophelong. In the non-poor, moderately poor and the very poor households, 40%, 46% and 52% respectively quit school before reaching the matric level and more than 17% were totally illiterate in the Bophelong sample survey.

The average household size in Bophelong sample was 3.96. In the non-poor households, it was 2.97 members, for the moderately poor and the very poor it was 4.2 members and 4.7 members respectively. The dependency ratio, on the other hand was 4.3 members for the whole of Bophelong, 3 for the non-poor households, 4.4 for the moderately poor households and 5.5 for the very poor households.

The calculated unemployment rate was 57.8% in the sample of Bophelong using the broad unemployment definition. The national unemployment figure for South Africa during the same period was 36%. In the non-poor households, unemployment was 32%. In the households considered moderately poor and very poor, unemployment was 61% and 81% respectively. The majority of the unemployed were youth. Those unemployed for a period exceeding 15 years constituted slightly above 7% of the unemployed in the sample survey. The economic inactive population was 45% of the whole sample survey.

On average, the minimum amount that could be accepted by the unemployed as monthly salary was R2 638, the figure was R3 195 in the non-poor households, R2 613 in the moderately poor households R2 106 in the very poor households per month. The average household income per month in Bophelong was R2910. In the moderately poor and very poor households, it was R1 641 and R932 per month respectively. The wages and salaries contributed the most income in the households (70%) followed by income from old age pension which contributed 15%. Subsidies contributed the least with a 0.3% contribution. Of the employed population, 14% received income less than R1000 and 3% received income above R9 000. The most common government grant in sample survey was the child grant where 70% of the interviewed households had at least one recipient for the child support grant. The child grant was most common among the very poor households while old age pension was common in the non-poor households.

In Bophelong, the education level was found to be low. In the population still at school, 8% are doing tertiary education while the remainder, 92% are below Matric. In the population of those out of school in Bophelong, 14% were illiterate while 47% dropped out of school before completing matric.

The demand patterns of the households in Bophelong were done by calculating the elasticities of demand. In modeling the determinants of poverty in Bophelong, the selected independent variables were household size, age of the household head, education level of household head, household income, household head gender, marital status of household head and the employment status of household head. Variables selected were presumed to be possible causes of poverty in Bophelong. Household size, age of the household head, household income and the employment status of the head of the household were found to be significant in determining poverty in Bophelong.

Another regression on the determinants of food consumption was done. The variables that were found to be significant were household size, education level of the head, household income and the employment status of the household head. These were found to have an effect in the household food consumption behaviour.

Each expenditure item was expressed as a percentage of total expenditure in the non-poor, moderately poor and the very poor households. The percentage spent on food was rising with the level of poverty where 32%, 42% and 53% was spent by the non-poor, moderately poor and the very poor households respectively. In the very poor households, maize meal and chicken meat had large weights in the food basket, in the poor households, bread and maize weighed the most while in the non-poor, chicken and bread had the greatest weights. Other expenditure weights that were rising with the poverty levels were cigarettes and tobacco, beer, wine and spirit and insurance. Insurance was mainly funeral contribution.

Price elasticity of demand was calculated using exponential logarithms. Among the food items, bread was found to be a Giffen good in the non-poor households. Beef was elastic among the very poor with an elasticity coefficient of -1.02541, making it a luxury item among the very poor, but inelastic among the non-poor households with the

elasticity coefficient of -0.28693. Milk and rice were elastic in all the households, meaning they were luxury commodities. The food items whose elasticities were rising with the level of poverty were beef, sugar and rice. Maize and chicken price elasticities were falling with the level of poverty.

With the non-food items, demand for coal was found to be elastic in the non-poor and the moderately poor households where the price elasticity was more than one. The possible reason for the high price elasticity for coal can be the availability of better substitutes like paraffin and electricity. Price elasticity for electricity, commuting, washing powder, cigarettes and tobacco, beer, wine and spirit was below one in all households.

Income elasticities for food items were done. All items were found to be normal goods where the income elasticity was positive except for bread among the non-poor households. Bread in the non-poor households had income elasticity of -0.08178 indicating that it was an inferior good in the non-poor households. All food items were income inelastic with elasticity less than one. For the non food items, income elasticity showed that coal was inferior in all households and paraffin was inferior in the non-poor households.

Cross elasticity of demand was used to determine the degree of substitutability between related products. Between maize meal and bread, cross elasticity was high among the very poor where it was 0.69087 and 0.06066 among the non-poor. Substitutability was high between maize meal and rice among the non-poor households compared to other households where the elasticity coefficient was 0.68267. Chicken and beef are more substituted among the non-poor while the very poor mostly substitute chicken with other meat.

There was stronger complementarity between maize meal and chicken among the very poor -0.63360 compared to other household groups while beef and maize meal were mostly used together among the non-poor -0.51810, compared to other households. A weak relationship between the quantity demanded for bread and the prices of sugar was found which gave the elasticity coefficient of -0.01038, -0.01052 and -0.01892 for

the non-poor, moderately poor and the very poor households respectively. Bread and milk cross was low in all households as well. There was nearly no relationship between the price of rice and the quantity demanded for chicken and other meat among the non-poor.

The relationship between household income and total expenditure on each item was investigated using Pearson correlation coefficient. All expenditure items were positively related to income, but not all were significant at 5% confidence interval. Food, transport, communication, clothing, medical expenses, insurance, savings and housekeeping, beer, wine and spirits were all positively related to income and significant at 5% level of confidence.

An enquiry was made on the how the households were impacted by rising prices. The increasing food prices seemed to have a greater impact on the poor households. In the whole of Bophelong, 87% of households reported that they have been severely affected by rising prices. However in the very poor households, 96% reported a severe impact as a result of rising prices. In response to rising prices, 91% of the households in Bophelong indicated that they now resort to buying cheap commodities. Among the basic food items, the majority, 98% indicated that maize is the most important food item in their livelihood and would recommend that its price should be controlled.

7.3 CONCLUSION

The study concludes that poverty is a contested term and as such difficult to define and measure. This gives rise to different poverty lines even within the same economy and each study therefore adopts, explains and justifies its chosen method. Inflation is an economic challenge hence the agreement of fighting inflation using appropriate policy measures. When prices continuously rise, consumers alter their buying behaviour, thus restrain from the consumption of goods which has become dearer and resort to cheap commodities.

The causes of poverty in Bophelong are low income levels, huge household sizes, unemployment and young household heads. Identifying the causes helps in direction of policies for poverty alleviation. The low income can be attributed to low skills levels in

the township. There is a large school dropout rate where 47% dropped out of school without completing matric. In the very poor households, 52% of the population out of school did not reach matric level. Large household size, another cause of poverty is likely to be due to the existence of extended families.

The consumption baskets of the poor and the non-poor households differ. The poor are mainly concerned with increasing their calorie intake, paying little attention to taste, nutritional composition and health. To the poor, the main issue is survival and therefore, only the price of a commodity matters when it comes to demand decisions. The study found out that the poor and the non-poor respond differently to price changes due to different economic situations that exist in these households.

When prices of basic commodities rise, the poor suffer more due to limited options in their consumption baskets. In cases of commodities with high weight in the consumer basket, a substantial price rise causes a great effect on those consuming it the most compared to goods with low weight. Therefore a rise in the price of maize-meal, bread and energy affects the poor mostly. This study provides further evidence that the budget share allocated to food increases as income falls. Like other previous studies, the poor households spend a greater portion of their budget on necessities such as food. In this study, the poor do not spend anything on entertainment while the non-poor spend some proportion of their income on entertainment. Low-value staple foods such as maize-meal and bread account for a larger share of the food budget in poor households.

The very poor households were the majority recipients of the child social grant. This grant has failed to alleviate poverty in these households making even the child recipient poor. In some of the households, the child grant was the only source of income and used for all the household expenses at the expense of the child recipient. As a result, though the government has made an effort to eliminate child poverty through the child grant, children receiving this grant still remain poor due to their household structures. Non-poor households were the major recipients of the old age pension.

A rise in the prices of basic commodities causes more suffering among the poor compared to the non-poor. The response to quantity demanded is less among the poor

households due to lack of cheaper options. This is indicated by low price elasticities of maize meal and chicken among the very poor, which was -0.21838 and -0.00930 respectively. The low price elasticity for chicken among the very poor is caused by the high price of beef, its substitute. On the other hand, price elasticities of what is considered to have substitutes was highest among the very poor households, this included beef (-1.02541) and rice (-1.59112).

An analysis of the elasticities revealed that though the basic economic theory postulates that a price elasticity of less than one indicates that the item is a necessity to consumers, therefore an elasticity of -0.99999 is interpreted the same as the price elasticity of -0.00001 yet the two indicate different degrees of necessities to the consumers. Categorising the households according to how far they are from their poverty lines helped to note how far the poor and the non-poor substitute one good for another in times of rising prices. In attempting to target the poor, the size of the elasticity coefficient should be considered for subsidy in order to improve poor households' nutritional status.

Some commodities indeed can overall be luxuries if the data is grouped, yet to the poor, the good can turn out to be a necessity. In designing anti-poverty policies that attempt to help the poor during inflation, it is necessary to take a closer look at the magnitude of the elasticity coefficient and how it changes as households' income increases. In the study, the case of rice can be an eye opener. The studied township is generally categorised as a low income area, and the non-poor households cannot really be considered rich, hence rice was found to be a luxury item in all the household types. This could be due to the existence of cheaper substitutes like maize meal. The price elasticity of demand for rice rises as households become poorer, making it more of a luxury among the very poor households. Grouping the households together could have failed to detect the giffen condition of bread found among the very poor households and also the inferior nature of bread among the non-poor households.

Price increases increase the suffering of the poor. This is shown by the 96% in the very poor households indicating that they were severely affected by increasing prices. Due to

this upward price movement, 91% had resorted to buying low quality and stale food which can be a threat to health especially among children.

The increases in food prices have a dominant role in increasing overall inflation in South Africa as a whole. It would be a misguide to address specific inflation causes with general macroeconomic instruments. Actually, specific policies are needed to deal with the causes and consequences of high food prices. Although there can be some policy challenges on several fronts, there are effective actions that can be taken to help the most vulnerable poor in the short term while working to stabilise food prices.

Price elasticities have many applications in economic planning and can be used to predict the consumption patterns and revenue effects of changes in commodity prices. Elasticities are also used in modelling to predict how changes in one commodity price will affect demand for other commodities. Elasticities can help evaluate the impacts of commodity price rises on nutrition. Knowledge of price elasticities for households of specific poverty levels helps in appropriate direction of a specific policy instead of generalisation of policy where the specific target group might fail to benefit from the recommended policy.

7.4 RECOMMENDATIONS

This section proposes possible recommendations aimed at protecting the poor when prices of commodities continue to rise. The information given can help in alleviating poverty, malnutrition and increasing demand among the poor households during a period of rising prices. Recommendations have been divided into specific and general recommendations.

7.4.1 Government policy direction

The government policy aimed at fighting malnutrition and boosting demand for basic commodities among the poor during inflation should consider the poor households' demand patterns together with their poverty levels. Consideration of mere poverty and demand in isolation might lead to policy being misdirected to a wrong population group where the poorest households might fail to benefit. If the aim is to improve nutrition,

there is need for government policy to target at the poorest households instead of the all poor in general. This can assist in mitigating the impact of price rises on the very poor where consideration is made on malnutrition control and broader social protection networks.

In achieving the specific recommendation, the following steps may be considered:

- The poor should be divided according to their degrees of poverty in order to separate the poor from the poorest for closer analysis of consumption patterns.
- The price elasticity of demand should be calculated to find out the responsiveness of quantity demanded to price changes. The size of elasticity coefficient acts as a guide in noting the degree of necessity of a commodity to the poor.
- Commodities with a very low price elasticity of demand in the poorest households are considered basic, preference should be given to those commodities in the form of a subsidy, if the policy objective is to fight malnutrition, which is a challenge to the poorest.

Finding out that a certain percentage of the population which is poor is not good enough, but also how deep are the poor in their poverty. This is because policy implications for these two household types are bound to differ. Governments should also assess their performance in responding to the food crisis. The policy effects on malnutrition rates, access to basic commodities and on poverty must be reported regularly against the internationally agreed indicator on nutrition as part of Millennium Development Goal (MDG) 1.

7.4.2 Expansion of social protection programmes

During a period of rising prices, the escalating commodity prices cause more people to fall below their poverty lines. This prompts the need for the government safety nets to enlarge fast enough in order to absorb the new poor. Focus should be on the needs of the poorest and the most food insecure families who need direct assistance. South Africa already has social protection programs in place like child grant, old age pension

among others. They need to expand to meet new and emerging needs when prices continuously rise.

7.4.3 Urban farming

In the survey, 20% of the households indicated that they had vegetable gardens while the majority buys vegetables. Access to own food production should be encouraged. One way to help alleviate hunger and malnutrition among poor households may be through urban agriculture. According to Egziabher *et al.* (1994) urban agriculture has positive outcomes in increasing food security. In addition to food security, urban agriculture can provide employment, supplement incomes and important nutrition. These vegetables can also be sold both in the Bophelong community and along the Golden Highway (Sekhampu, 2004:115). The creation of a market place along the Golden Highway where vegetables, arts and crafts, clothing and other products could be sold may provide both incentives and manufacturing possibilities to the Bophelong community. There is need for the community in Bophelong to work towards identifying land for agriculture. Increased food production, reducing food import restriction, encouragement of agriculture can limit food crisis in the township.

7.4.4 Economic growth

This is a macroeconomic approach that attempts to stimulate the economic activities in a bid to alleviate poverty and increase demand. Rising incomes from economic growth can compensate for increased commodity costs and mitigate price rises. There is need to improve the purchasing power of poor food buyers so they can acquire enough food even at the higher prices by fostering growth and development in the economy. Investment in agricultural research and education may be the best way to cut poverty and stimulate economic activity. Also, improving basic governance systems, macroeconomic policy, infrastructure and health may be necessary.

7.4.5 Food aid programmes

This is a humanitarian aid approach. With higher prices, the numbers of people suffering from extreme hunger increases. The 1st UN MDG becomes a greater challenge. Immediate and substantial aid is required, where appropriate in the form of

cash or food vouchers in order to strengthen the recipients. Government must assess the performance of these programmes in responding to food crisis by their effect on malnutrition rates. Nutrition programs should focus mainly on early childhood.

7.4.6 Supply side resolution

On the supply side, the link between production, costs and climate changes can be further explored. Investments in technology, tax cuts, elimination of trade barriers, export restriction, encouraging imports could do much to increase productivity and output. Also, a limit should be set on basic commodity prices. Factors that restrict supply like fuel price hikes and exchange rates fluctuations should be managed so that the effect cannot largely fall on the poor.

7.4.7 Access to finance

Another way of helping the poor during rising prices is access to loan for starting businesses and for the purchase of necessities. Barriers to formal sector entry and lack of financing for low-income earners seem to stall the development process of small businesses. The informal activities currently available in Bophelong range from small scale manufacturing to the selling of fruits or vegetables on streets corners. Lending arrangements will cushion against price fluctuations (Sekhampu, 2004:115).

7.4.8 Seek donours

Donors should be sought to respond promptly to the increased humanitarian needs arising from increases in food prices. Aid donors should expand food-related aid, including child nutrition programs and school feeding schemes.

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ANNEXTURE 1: HOUSEHOLD SURVEY

A map was obtained for Emfuleni which covers Bophelong and sample stratification for Bophelong was designed on account of the geographical distribution and concentration of people in the areas. A questionnaire was designed based on the literature and the household structures for obtaining the desired information. The area was divided into different extensions and questionnaires were apportioned evenly among the sites. Where people could not be obtained for an interview, or where it was impossible to trace the house, a next preselected household was interviewed. Efforts were made to obtain information from the household head or the spouse. A total of 315 households were interviewed by 4 trained fieldworkers. Almost all the household approached were willing to partake in the survey and 301 questionnaires were completed in March 2012.

ANNEXTURE 2: COVER LETTER



TO WHOM IT MAY CONCERN

This serves to confirm that the survey being undertaken is for pure academic purpose. The information is for the student Dorah Dubihlela with the study topic:

THE POOR'S DEMAND PATTERNS DURING RISING PRICES: THE CASE OF BOPHELONG.

Care was taken to maintain confidentiality and unanimosity; information will not be used for other purposes besides academic purpose.

D. Dubihlela (Student)

Dr. T.J. Sekhampu (Promoter)

ANNEXTURE 3: BOPHELONG QUESTIONNAIRE: FEBRUARY 2012

Please note that this information will be treated with strict confidence

BOPHELONG	QUESTIONNAIRE #	Date	
HOUSE number		Interviewer	

Please note that the Head of the household should preferably answer the questionnaire

A BACKGROUND INFORMATION						
1	What is the position of the respondent in the Household?	Head (1)	Spouse (2)	Child (3)	Extended family member (4)	
2	Gender of the head of the household			Male (1)	Female (2)	
3	How many housing units are on the site					
4	How many people stay permanently on the site					
5	Type of a dwelling structure	(1)RDP	(2)Shack	(3)Brick	4(Other)	
6	How long have you (respondent) stayed in the Bophelong (years)					

B HOUSEHOLD COMPOSITION									
<i>Please provide the following information about your households</i>									
1	Number of people in the household								
2	Composition of members (code list 1)								
3	Age of each member in years								
4	Sex (Male = 1; female = 2)								
5	Marital Status (code list 2)								
6	Highest qualifications (still at school) (code list 3)								
7	Qualifications (not at school) (code list 4)								
8	Employment Status (code list 5)								
9	Sector of employment (code list 6)								
10	(10 – 13 for unemployed only) Skills of unemployed (code list 7)								
11	Duration of unemployment in years								

12	What is the Unemployed doing presently (code list 8)								
13	Minimum wage required to take a job								
	INCOME (Take home pay per month)								
14	Wages/salaries (Formal)								
15	Old Age Pension								
16	Child Grant from Government								
17	Other Grants from Government								
18	Help (family/relatives/help in kind)								
20	Informal activities								
21	Subsidies (e.g. Housing)								
22	Other (Specify)								

C	HOUSEHOLD EXPENDITURE				
How does your household spend their income per month?					
	ITEM	Weight per week	Weight per month	Rands per week	Rands per month
1	Housing				
2	Water				
3	Energy				
	Electricity				
	Coal				
	Paraffin				
	Other				
4	Food				
	Maize				
	Bread				
	Meat				
	Meat - Chicken				
	Meat - Beef				

	<i>Meat - Other</i>				
	Vegetables				
	Cooking Oil				
	Sugar				
	Tea / Coffee				
	Milk				
	Rice				
	Other food Items				
5	Cleaning Material				
	Washing powder				
	Other				
6	Cigarettes & Tobacco				
7	Beer, wine & spirits				
8	Transport				
	Taxi				
	Car				
	Other				
9	Clothing				
10	Furniture				
11	School				
12	Entertainment (Movies etc)				
13	Medical Expenses				
14	Insurance e.g. funeral scheme				
15	Gambling				
	Lotto				
	Horseracing				
	Cards / Mshaina				
	Other				
16	Savings				
17	Licenses (e.g. TV, Vehicle)				
18	Housekeeping Services (e.g. Garden)				
19	Communication				

	Telephone				
	Cellphone				
20	Car Repayment				
21	Loan repayments				
22	Other: Specify				

D	POVERTY PERCEPTIONS		
1	Do you have enough income to support your family?	YES	NO
2	Is the household head employed?	YES	NO
3	Do you normally have three meals a day?	YES	NO
4	Do your neighbours lend you food e.g. a cup of sugar?	YES	NO
5	If so, do you normally return the food?	YES	NO
6	Have you had to ask for financial help from family / friends	YES	NO
7	Has there been days in the last three months you did not have food	YES	NO
8	Do you consider yourself poor?	YES	NO
9	Define poverty		

E	PERCEPTIONS ABOUT RISING PRICES				
1	How has the increases in prices affected your family?				
		1. Severely	2. Moderately	3. Slightly	4. Not affected
2	Rank the impact of the rising in prices on the following item				
	Item	1. Severely	2. Moderately	3. Slightly	4. Not affected
	Electricity				
	Food				
	Basic				
	General				
	Meat / Chicken				
	Commuting e.g. Taxi				
	Overall cost of living				

3	How important are the following items to your livelihood?					
	Item	1. Very	2. Moderately	3. Indifferent	4. Less	5. Not

		important	important		important	Important
	Maize					
	Bread					
	Meat / Chicken					
	Vegetables					
	Milk					
	Cooking Oil					
	Tea / Coffee					
	Sugar					

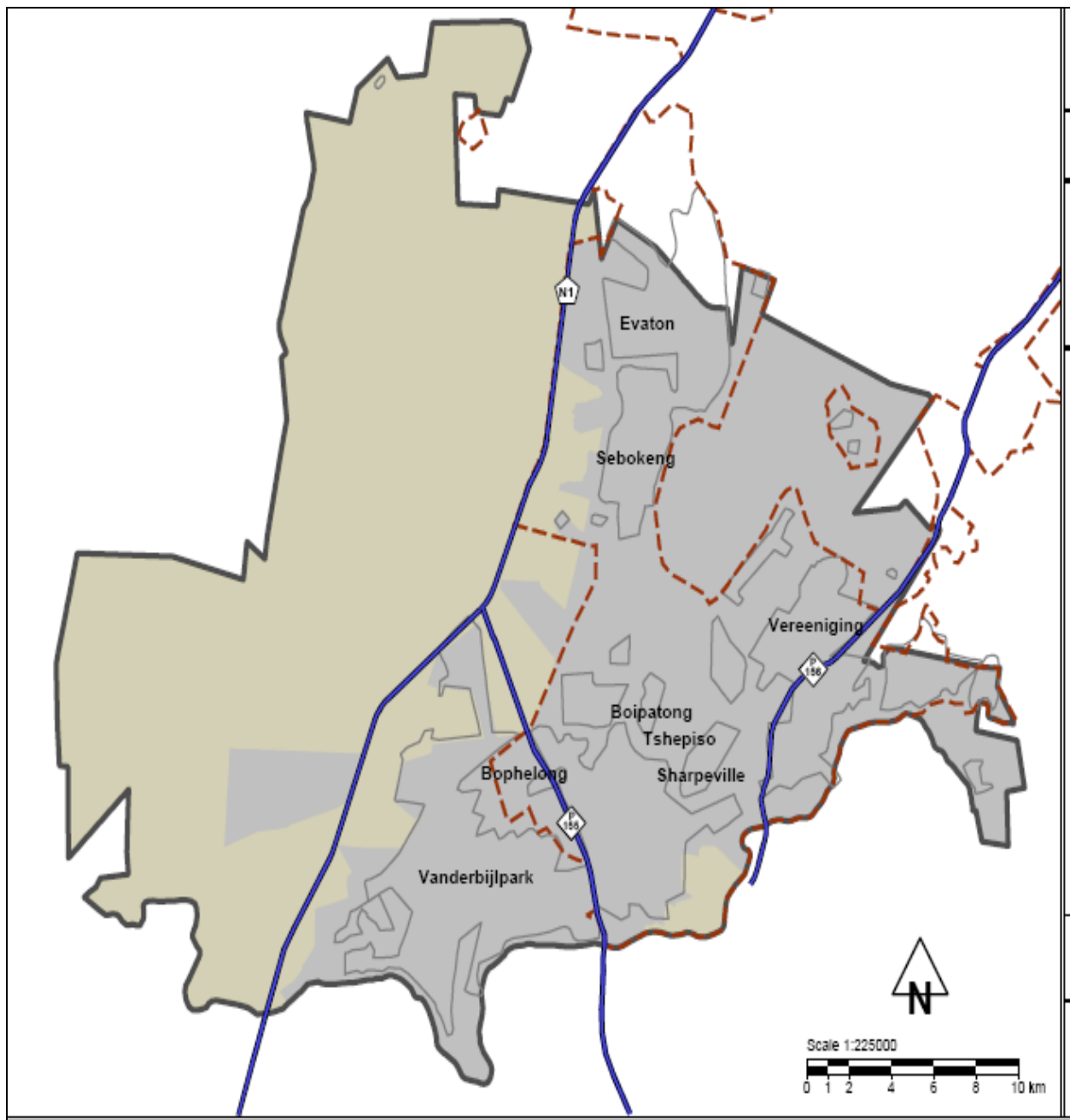
4	Have you acquire any of the following items in the last 12 months		
	Radio (Hifi system)		
	Furniture		
	Cell phone		
	Car		
	Television		
	Other specify (sewing, welding machine etc)		

5	Does someone in your household have a vegetable garden, or carry any food production activities?	YES	NO
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6	Is any of your household member engaged in activities to generate additional income	YES	NO
---	---	-----	----

7	Have you adopted any of the following means in response to rising prices (tick)	
	Rely on less expensive commodities	
	Buy on credit	
	Skip meals	
	Resort to eating porridge	
	Buy necessities	
	Stick to budget	
	Maintain a food garden	
	Do odd jobs in the neighbourhood	
	Sell productive assets	
Other (describe)		

ANNEXTURE 4: GEOGRAPHICAL LOCATION OF BOPHELONG



Source: Demarcation Board, 2008:6