



**University of Fort Hare**  
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**EXPLORING THE ROLE OF EDUCATION, INCOME AND STANDARD OF LIVING  
IN DETERMINING FOOD SECURITY AMONGST MHLONTLO LOCAL  
MUNICIPALITY CITIZENS IN THE EASTERN CAPE**

**FULL DISSERTATION**

**BY**

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**Submitted in partial fulfilment of the requirements for the degree of**

**MASTER OF COMMERCE (THESIS)**

**In the subject of**

**INDUSTRIAL PSYCHOLOGY**

**In the Faculty of**

**MANAGEMENT AND COMMERCE**

**Of the**

**UNIVERSITY OF FORT HARE**

**SUPERVISOR: MR.M DYWILI**

**2017**

**Declaration**

I, the undersigned, Khanyiswa Halam, hereby proclaim that the study on **‘Exploring the role of education, Income, Standard of living in determining food security amongst Mhlontlo Local Municipality Citizens in the Eastern Cape’** is my own original work and that any quotations used in the study have been accredited to their authors. This dissertation has not formerly been submitted for any degree or examination at anywhere else or any other university. I also hereby declare that I am entirely aware of the institution’s policy on plagiarism and I have taken every precaution to comply with the regulations.

.....

**Signature**

/ / 2017

**Date**

### **Acknowledgements**

I would like to thank all the people who helped and supported me with writing this research project.

**Firstly**, I would like to thank my supervisor, Mr Dywili, for encouraging me and the support he gave me.

**Secondly**, I would like to thank the participants of Mhlontlo Local Municipality who took part in completing the questionnaires as part of the data collection

**Thirdly**, I would like to thank the members of my family for all the support they gave me throughout my time of study at Fort Hare.

## **Dedications**

I dedicate this work to:

My parents whose courage, determination, love and support remains my source of inspiration forever. I promise to study further.

To all my brothers, for their endless love and support

### **Abstract**

The aim of this study was to explore the relationship that exists between education, income, standard of living and food security amongst Mhlontlo local municipality citizens. For this purpose, data was collected from citizens of the Mhlontlo municipality in the Eastern Cape. A sample of 101 municipality citizens was drawn from the population. Results of the study indicated that the study variables are significantly negatively correlated with one another. The findings of this study are helpful in providing support to policy makers and social security agencies to have a better understanding of food security and indicate one important avenue to reduce food insecurity in Mhlontlo municipality and the Eastern Cape at large.

**Key words:** Education, Income, Standard of Living, Food Security.

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## List of Acronyms

Centre for Poverty, Employment and Growth	CPEG
Department of Agriculture, Forestry and Fisheries	DAFF
Eastern Cape Development Corporation	ECDC
Expanded Public Works Projects	EPWP
Farm and Food Policy Project	FFPP
Food and Agriculture Organization	FAO
Income and Expenditure Survey	IES
International Labour Organisation	ILO
General Household Survey	GHS
Household Hunger Scale HHS	HHS
Human Sciences Research Council	HSRC
Living Standard Measure	LSM
Millennium Development Goals	MDG
South African Audience Research Foundation	SAARF
Statistical Package for the Social Sciences	SPSS
Statistics South Africa	Stats SA
United Nations	UN
United Nations Development Programme	UNDP
World Food Summit	WFS

## **Chapter One: Introduction**

### **1.1 Introduction**

This chapter provides an introductory summary of the general background of the entire study that will be the subject of this report. The problem statement, research questions, the objectives and the hypotheses will be stated and discussed in this chapter as well. The study sought to explore the role of education, income and standard of living in determining food security amongst Mhlontlo local municipality citizens in the Eastern Cape.

### **1.2 Background of the study**

“Mhlontlo Local Municipality is situated on the north-east side of the Eastern Cape Province” between Mount Frere and Mthatha next to the N2 route. It is an administrative area within the O.R Tambo District. It is located on “the north-east side” of the province next to the N2 route. It covers both Qumbu and Tsolo with 7,794 of its population with most of them residing in rural areas. The population consists mostly of Africans with the majority of 99%, with Xhosa being the predominant language (Eastern Cape Development Corporation (ECDC), 2013).

South Africa is in essence alleged to be a food secure nation, “producing enough staple foods or having the capacity to import food, if needed in order to meet the basic nutritional requirements of its population” (FAO, 2008). On the same note, Hart (2009) also backed the argument on the position that South Africa appears to be food secure at both regional and national level though this may not be the same considering households in rural areas. Although it may be generalized that South Africa could be “food secure” as a country, a

significant number of households across the country are “food insecure”. In terms of income distribution, South Africa is said to be among the leading countries in terms of the highest rate of “income inequality” in the world. In addition to unequal distribution of wealth, the level of poverty in South Africa is alarming when compared to other middle to low income countries. Such inequalities in income have contributed significantly to household food insecurity.

According to Statistics South Africa (2014) “an estimated 20% of South African households have inadequate or severely inadequate food access. The General Household Survey (GHS) report indicates further that during 2012 food access problems were mostly serious in Free State where 33.5 % of the households have inadequate food access. They were followed by household in Kwazulu-Natal with 23%, Eastern cape 21,4 % and Mpumalanga 21,5 %. Limpopo (11,9 %) and Western Cape (14,5 %) had the least food security problems in 2008 (General Household Survey, 2014). According to the FAO report (2008), “high unemployment rate, inadequate social welfare systems and a high HIV/AIDS infection rate have all contributed to food insecurity in the country”.

The Eastern Cape Province is regarded as the poorest province that is characterized by uneducated people who are unemployed hence: there are- poor living standards in the province especially in Mhlontlo District Municipality. Due to the fact that most citizens are uneducated they then can't get employment thus there is not enough income to sustain a living (Socio-economic review and outlook, 2013). The economy of Mhlontlo depends mostly on government related spending. The primary source of formal employment is at government organizations such as the Dr Malizo Mpehle Memorial Hospital, Nessie

Knight Hospital and at agricultural institutions such as Tsolo agriculture (Mhlontlo development plan, 2011)

According to ECDC (2013) it is estimated that a huge number (46-90 %) of citizens in the Municipality are unemployed and are dependent mostly on government social grants for their living. Most residents were employed in the nearby government plantations which were sold and are now privately owned. There were also government training schools where Mhlontlo citizens were working as general workers that are no longer functioning. Some of the individuals around the area are working on the expanded public works projects (EPWP) where they get temporary employment from private contractors who are contracted to the state, they receive different sources of income that do not seem to be enough to cover all the households' expenses, transport cost, hence most of them rely on government spending (Aliber, 2009).

The connection between household food security, unemployment, education, incomes and poverty is somewhat unclear. In order to understand the status of "household food security in this country", it is essential to critically examine the logistics of the "food distribution system" as well as the mechanism of how resources of each household determine access to food (Altman & Jacobs, 2009). "There are distributional and accessibility problems that need to be understood. Ideally, poverty and food insecurity would be addressed by expanding employment opportunities thereby enhancing household incomes" (Aliber, 2009). According to Hart, (2009) "employment has expanded substantially since the mid-1990s, but not enough to meaningfully address income poverty. Income security is an essential ingredient to address food insecurity".

Hart, (2009) indicates that “food security is a broad concept and the meaning and the measurement is not obvious as it may seem. Food security is multidimensional in nature”. In light of this argument, it is clear that food security is evident when “all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (World Food Summit, 1996). From this definition, it is observed that there are four main dimensions of “food security”. Baiphethi & Jacobs, (2009) alleges that “physical availability of food addresses the supply side of food security and is determined by the level of food production, stock levels and net trade”. Basing our argument on “economic access” and “physical access” to food addresses only an “adequate supply of food” at both national and or international level, but this does not necessarily warranty household level “food security”. Household incomes, expenditure, markets and prices are key determinants to sufficient food access and household food security (Aliber, 2009).

The third dimension is “food utilization”. This is generally understood as “the way the body makes the most of various nutrients in the food” (Demetre, Yul & Zandile, 2009). Sufficient energy as well as “nutrient intake” by individuals emanate from various things which significantly can contribute to food security. As far as stability is concerned it refers to “the stability of the other three dimensions over time” (Baiphethi & Jacobs, 2009). Even though a household`s food intake is inadequate today, he or she is still regarded to be “food insecure” if its access to food is no prolonged over a period of time, risking the deterioration of nutritional status. Unpleasant economic conditions and political instability



that include unemployment, as well as rising food prices may thus influence household's food security status (Aliber, 2009).

The practical implication of this study mainly relates to food security. There is much research and strong evidence suggesting that income and education leads to or is associated with variable of great importance to societies and the economy (Ndhleve, Musemwa & Zhou, 2012). It is therefore of crucial importance for government officials to know what variables lead to or are antecedents of household hunger and food security. Such knowledge would enable these officials to create conditions that are conducive in promoting food security in Mhlontlo municipality. With this regard the study seeks to examine the role of income, education and standard of living in determining food security in Mhlontlo local municipality.

### **1.3 Problem statement**

There is a relationship that exists between education and employment. The more you are educated the likely you are employed and vice versa (Ndhleve et al. 2012). It is estimated that more than 50 thousand children around the Eastern Cape do not have access to basic education (Demetre et al., 2009). Many children rely on informal employment opportunities to sustain a living. This has a negative bearing on the amount of income these individuals get to sustain a living.

According to the Eastern Cape Socio Economic review and outlook (2013) the province still faces significant social challenges as it also characterized by high level of food insecurity which is estimated to be "78% which is significantly higher than the national average of 64% and its households being classified as food insecure". It has been found

that most of the food insecure households are in rural areas, have large family sizes and are owned by black woman (ECD, 2013)

Despite being a middle-income country with a fairly industrialized and diversified economy, South Africa is still a developing country. As with other developing countries, agriculture plays a central role in the country's economy. Thus, the country's commercial farming sector ensures its sufficiency in food supply. However, there is widespread food insecurity at the household level. This means that apart from the availability of food, problems still exist in terms of its accessibility. Thus, food security is more than just about eradicating hunger resulting from inability to afford food. It is also about ensuring that people consume enough of the right nutrients (i.e., healthy food). Nevertheless, households' affordability of food remains a crucial aspect which the current study explored. Thus, the relationship among household income, standard of living and food security deserves investigation in so far as income impacts on the household's food-security status. In recent years, South Africa has also experienced unstable food prices due to inflation, food became unaffordable which lead to households skipping meals, cutting the meal sizes and sometimes going for more than one or more days without food (Ryan, 2013). When food becomes, unaffordable households become food insecure thus leading to low living standards. According to Labadarios, Davids, Mchiza, and Weir-Smith, (2009) inflation left a huge number of South African households vulnerable to food security and sometimes struggling to meet their basic needs due to low income and high food prices.

A recent study by Abrahams (2012) in the Eastern Cape noted that households do not receive a sufficient income to meet their food needs at a satisfactory level. The availability

of money has a direct effect on household's access to sufficient food. Food remains unaffordable in most of these households due to low wages and households' income and this is worsened by household spending on municipal services, transport, education, accounts and health since households cannot live without these goods. Limited income and limited opportunities to generate income are found to be factors contributing to household hunger in the Province, hence the purpose of the study is to explore the role of education, income and standard of living in determining food security amongst Mhlontlo municipality citizens in the Eastern cape.

#### **1.4 Aims and Objectives of the study**

The main aim of this study is to explore the role of education, income and standard of living in determining food security amongst Mhlontlo Municipality citizens in the Eastern Cape

- To explore the relationships between level of education and food security amongst Mhlontlo local Municipality residents.
- To explore the relationships between income and food security amongst Mhlontlo local Municipality residents.
- To explore the relationship between education, income and standard of living
- To determine the minimum level of household income required for food security
- To provide recommendations on how food insecurity can be reduced.

#### **1.5 Significance of the study**

By examining and clarifying the nature and degree of the role of income, education and standard of living in determining food security, the study may provide support for policy

makers and social security agencies to have a better understanding of food security and may indicate one important avenue to reduce food insecurity in Mhlontlo municipality and the Eastern Cape at large, for example local rural economies, municipalities, in collaboration with other stakeholders in the private and public sectors, can initiate and support income-generating activities that enable rural community members of economically-active age to advance and utilise their knowledge, skills and abilities in contributing to the local economic development as recommended in national legislature.

Useful and valuable policies and practices will be suggested to be implemented within the community with an attempt to enhance food security. The results of the proposed study will add to existing body of literature in terms of the relationship between the study variable particularly in the South African context.

### **1.6 Research hypothesis**

H<sub>0</sub> There is no relationship between education and food security.

H<sub>1</sub> there is a relationship between education and food security

H<sub>0</sub>: There is no relationship between income and food security.

H<sub>2</sub>: There is a relationship between income and food security.

H<sub>0</sub>: Income does not mediate the relationship between education and food security

H<sub>3</sub>: Income mediates the relationship between education and food security

H<sub>0</sub>: There is no relationship between education and standard of living.

H<sub>4</sub>: There is a relationship between education and standard of living.

H<sub>0</sub>: There is no relationship between income and standard of living.

H<sub>5</sub>: There is a relationship between income and standard of living.

H<sub>0</sub>: Income does not mediate the relationship between education and standard of living.

H<sub>6</sub>: Income mediates the relationship between education and standard of living.

### **1.7 Research questions**

- Is there a relationship between level of education and food security amongst Mhlontlo local Municipality residents?
- Is there a relationship between income and food security amongst Mhlontlo local Municipality residents?
- Is there a relationship between education, income and standard of living?
- What is the minimum household income required for food security?
- What is the minimum education level required for food security?

### **1.8 Delimitations of the study**

In conducting the current study, a number of delimitations were encountered. The study only focused on income, level of education, standard of living and food security as the study variables. The choice of the research problem and objectives were based on the researcher's determination to contribute towards addressing the widespread problem of food insecurity affecting so many people. This choice of study variables are at the expense of other variables. The study will be conducted in Mhlontlo Municipality in the Eastern Cape Province.

## **1.9 Chapter outline**

### **Chapter one - Introduction and background of the study**

Chapter 1 provides the introduction and the background of the study concerning the problem of the study. Also, the chapter outlines and explains the problem statement, research objectives, hypotheses and the significance of the study.

### **Chapter two - Literature review**

Chapter 2 of this study provide the literature review of income, education, standard of living and food security. The results of previous studies related or similar to the current study are reviewed for comparison with the current study's results.

### **Chapter Three - Research methodology**

In this chapter, the research method to be applied in the proposed study is discussed. The population, sampling, sample size, sampling procedure, techniques and instruments will be discussed in this chapter.

### **Chapter four – Data Analysis**

This chapter deals with the analysis of the results and data collection. Tables, graphs and figures will be used to interpret the results of the study.

### **Chapter 5 - Conclusions and recommendations**

This chapter provides the summary of the proposed study and the recommendations on how food insecurity can be alleviated.

### **1.10 Conclusion**

The present chapter introduced the research providing the background information necessary to start and continue with the study, also stated were the importance and problem statement. In addition, the hypothesis, research objectives and the research questions were also discussed in this chapter. The following chapter will dwell more on the review of literature necessary to explain the study.

## **Chapter two: Literature review and theoretical background**

### **2.1 Introduction**

Gray (2004) describe literature review as “a systematic search of published work to find out what is already known about the proposed research topic and literature review is intended to establish the need for research”. Hence, Hofstee (2006) reveals that “literature review is the selection of available documents on the topic written from a particular standpoint to fulfill assured aims or express certain views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents in relation to the research being proposed” (Booth, Papaioounniou & Suttona, 2012, p.02). Literature review also enables the researcher to familiarize with the latest developments in the particular area of study and thereby attempt to bridge the gap between what the researchers intend to research on and what is available. Therefore, this chapter seeks to disentangle all the information pertaining to the role that education, income and standard of living play in determining food security in Mhlontlo municipality based on available literature, past research and existing formulated theories.

It is essential to acknowledge that literature review enables the scope of the research to best be aligned to the research objectives which were mentioned herewith in the preceding chapter. The literature will consequently be on the basis of the entire roles that education, income and standard of living play in determining food security in Mhlontlo municipality in South Africa. These topical areas will be discussed in this chapter to create a direct link between the research questions, available literature and the empirical evidence. To achieve the compilation of this chapter various sources were explored, with



the inclusion of books, journal articles, official reports, government websites and portals. This section consists of three sub-sections, which are inclusive of the theoretical framework, the conceptual framework, and the empirical evidence supporting this research.

## **2.2 Theoretical Framework**

In the research process, it is obligatory that the research should be structured along a particular theory or theories. This theory seeks to substantiate the objectives of the research by aligning it to the broad objective of the research. Therefore, this section provides a theoretical framework underpinning the study. Hence the theoretical approach to food security is driven by the motive to understand the underlying determinant factors affecting the food security status in Mhlontlo municipality. There is however a large family of theories which guide food security, but this research was best guided and applicable by the Basic Needs of Development Approach which seeks to deal with the basic necessities for humans pending the concept of poverty vis-à-vis food security in every aspect.

### **2.2.1 Basic Needs Theory on Development**

The objective of “a basic needs approach is to provide opportunities for the full development of the individual” (International Labour Organization (ILO), 1996). “It focuses on mobilising particular resources for particular groups, identified as deficient in these resources” (International Labour Organization (ILO), 1996). It is contrasted with the income and employment approaches, which neglect important features of meeting basic needs. “The essence of the case for the basic needs approach” is that the gap between requirements and “the basic needs approach is one of the major approaches to the

measurement of absolute poverty in developing countries which then amounts to food insecurity". The theory attempts to explain the total minimum resources essential for "long-term physical well-being", typically the consumption goods (ILO, 1996). The "basic needs approach" has been described as "consumption-oriented and this gives the impression that poverty elimination is all too easy because the basic needs approach's main concern is to provide people with their basic needs" (Raphael, 2009). However, the main objective of "the basic needs approach" of development in this research is to ensure that "all human beings have the opportunity to fully live their lives sustainably with adequate food" (Streeten & Shahid, 1998). The approach mainly focuses on acquiring access to minimum acceptable consumption or acquisition of basic goods and services for instance food, water, education and health. The "basic needs approach" as one of the poverty oriented methodologies of dealing with access to food, "directly attaches the fundamental importance to poverty eradication within a short period as one of the main objectives of development" (Streeten & Shahid, 1998). Hence it becomes mandatory to the research which seeks to determine the roles that education, level of income and standard of living play in determining food security to ensure poverty alleviation.

In relation to this research in perspective there is need for citizens to have food security and the government should attempt to provide basic necessities such as education to the poor so that they can attain sustainable employment and obtain income so that they can provide for themselves. The government must be in a position to provide some basic needs to the unemployed people who are unable to secure jobs so that they can be food secure to sustain their low incomes and elevate their standards of living. This is because the Basic Needs Approach asserts that providing the poor people with basic needs and

necessities might be of assistance to them in achieving food security (Raphael, 2009). Hence the poverty datum line is defined as “the amount of income required to satisfy those basic needs and necessities” (ILO, 1996). As acknowledged upon the introduction of “the Basic Needs Approach” by the “International Labour Organization's World Employment Conference in 1976” (Denton, 1990). The “basic needs approach” to development was sanctioned by governments, workers and employer’s organizations across the globe in an effort to encourage “programmes and policies of major multilateral and bilateral development agencies, and it was the precursor to the human development approach” (Dharam, 1978). “A traditional list of the immediate basic needs is inclusive of food, water, shelter and clothing” (Richard, 1976). However, “many modern lists emphasize the minimum level of consumption of basic needs of not just food, water, clothing and shelter, but also sanitation, education, healthcare and security” (Richard, 1976). Some clear directions “for further research emerge, given the seeming depth of household food insecurity in South Africa, it is urgent that a food security target be identified within the overall objective of reducing poverty, with clear strategies in support. Hence the future development path depends considerably on the achievement of an acceptable level of human development” (Raphael, 2009). The Critics of “the basic needs approach” have however repeatedly stated that “such an approach sacrifices savings, productive investment, and incentives to work for the sake of current consumption and welfare of the low-income earners who are at the risk of poverty” (Vogel, De Swart & Kirsten, 2004).

### **2.2.2 Income based approach**

This approach emphasizes the accessibility, the means to purchase food and the affordability which is the ability of households to purchase food. The income based approach also puts much effort on consumers' reaction to price shocks. It further looks on the availability policies and programs that help households when such shocks occur.

According to Anderson (1990) food security can be analysed at national level, community level and at household level. He further distinguished between starting with food security at national level which is the situation where a country is able to produce, import, keep and sustain food required to support the country's population. At community level, is the situation where residents get culturally accepted, healthy and safe food that encourages self-reliance in a community. At household level, it is whereby all the family members are free from hunger and do not fear starvation. In relation to the proposed study if individual have limited income they won't be food secure compared to people with high incomes who might have the available income to buy sufficient healthy food. For an individual to have sufficient income he or she must be educated so as to obtain a decent job that can enable him to earn and be able to buy sufficient food.

### **2.3 Conceptual framework**

Joubert, (2010) posit that "declining food security is a key issue which influences numerous individuals in developing countries, and South Africa is no exception. Literature suggests that although detailed information is not available about the exact amount of food insecure households in South Africa, food insecurity does exist". There are a significant number of aspects that impact decreased "food security". More so, households

in rural municipalities such as Mhlontlo often reveal threats of decreased “food security” and these include education, income and standard of living. Food is seen as “a basic human right, and lack of or inadequate food consumption has serious implications for general body health and well-being, growth, development and cognitive ability among children, and labour productivity” (FAO, 2005). Sufficient quantity as well as quality of food are, thus, important for the propensity to learn, grow and earn a living of a human being. This entails that “food insecurity is a threat to the overall human well-being, as well as all the efforts geared toward poverty reduction and economic growth” (FAO, 2005). “Food security” is defined as “a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meet their dietary needs and food preferences for an active and healthy life” (FAO, 2002). Consequently, “food insecurity” occurs when “there is limited availability of nutritionally adequate and safe foods, or when there is low capacity to obtain that kind of food”. Literature supports that food security is a multidimensional concept because it encompasses “food availability, affordability, adequacy, safety and food quality and they all contribute to a decrease in household food security or the enhancement thereof” (Thon, 1979). Based on the provided information, “the pillars of food security and socio-demographical aspects of a household were also used in this research as possible factors that determine food security” (Thon, 1979).

#### **2.4 Socio-demographical factors that determine food security**

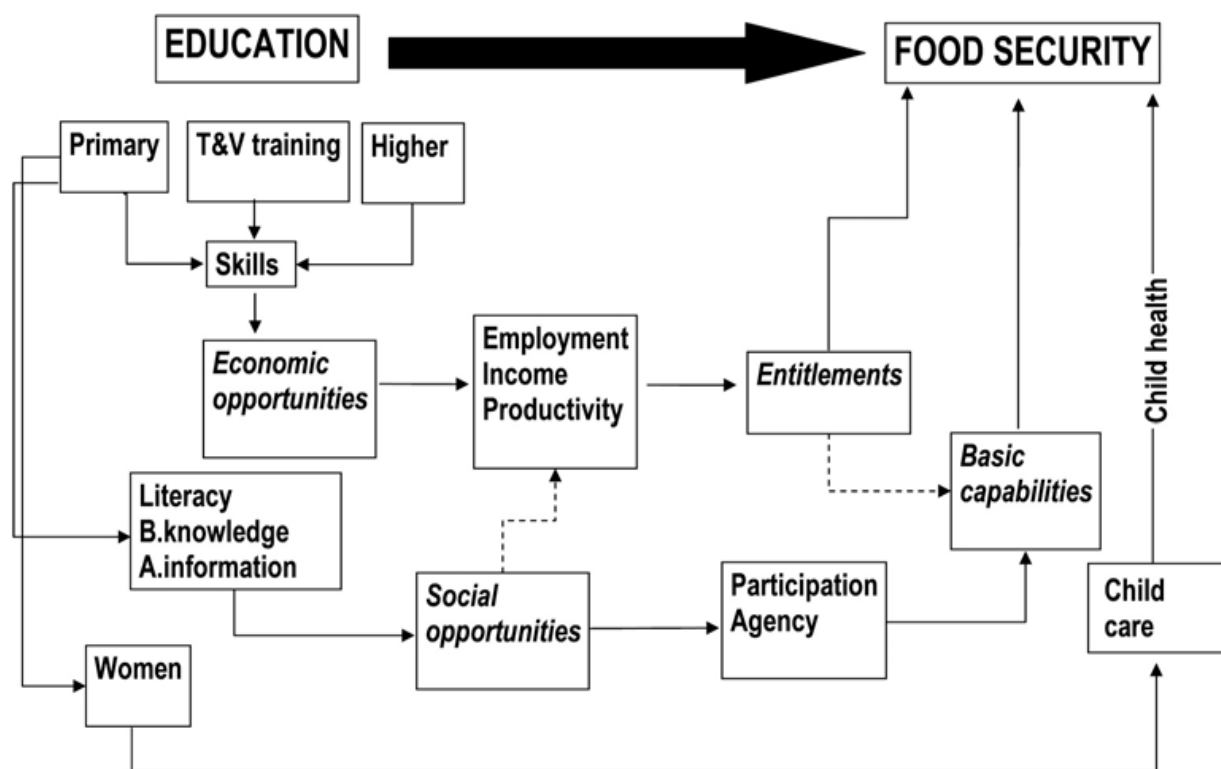
The status of “food security” in South Africa is a cause of concern, as a result “food insecurity” must be addressed efficiently in order to eliminate prolonged “food insecurity” in vulnerable households. Several socio-demographical factors which include income,

level of education and standard of living have a strong influence on household food security. These “socio-demographic influences include characteristics such as age, income and level of education” (Zain & Naing, 2002). Therefore, inadequate and inconsistent support as well as the lack of inclusion of households, contribute to failed “food security” initiatives (Baiphethi & Jacobs, 2009). It is important to comprehend and establish the extent to which these factors contribute to household “food security” because the eradication of hunger and poverty is a mandate of the Millennium Development Goals (Kekana, 2006). The lack of financial resources directly influences the sufficient access to education and food, resultantly this leads to inadequate utilisation of such resources and ultimately food insecurity (Joubert, 2010). For that reason, the aim of this research is to explore the roles that education, income and standard of living play in determining food security in Mhlontlo Municipality in South Africa. In addition, this study explored the determinant factors of food security based on the aforementioned socio-demographic factors as well as empirical evidence on the role these factors play on food security.

#### **2.4.1 Education**

Food and Agriculture Organization (2005) asserts that although education is highly praised as the most influential engines for alleviating hunger and poverty. Education substantially impact food security but exclusively conceived in economic terms. The same report (FAO, 2005) further clarifies that “lack of education undermines productivity, employability and earning capacity”, standard of living and this directly leads to poverty. This clearly reflects on the fact that education plays a chief role in ensuring food security because “it increases personal earnings and productivity, and economic growth”, thereby

securing household food security (Woodhall, 2001). More specifically, in rural areas the role that education plays is to improve agricultural productivity thereby leading to food security (Koffio-TessioTossou & Homevor, 2005). A research study conducted, “whose results were derived from 118 studies conducted in several geographical areas (17 in developing countries and 1 in Japan), estimated that completing the first four years of formal schooling results in a 7.4 percent increase of agricultural productivity which promotes food security” (Jamison, 1982). However, this approach of education and the role it plays on food security did not command enough support because it follows an economic model of solving issues of food security. Thus, it only identifies the “contributory economic role of education” (Woodhall, 2001; Sen, 1997). The approach is claimed to only recognize education, conversely, “despite the fact that it can have a double indirect role which is through economic production and through social change” (Robeyns, 2006). This methodology is particularly more suitable to recent phenomenon of food security, “which goes beyond the simple attention on food supply but securing adequate household food” as illustrated by the diagram below (Woodhall, 2001).



**Figure 2.1.** Direct and Indirect Contributions of Education to Food Security

#### 2.4.1.1 The role of Education on food security

According to the FAO (2005) “there is a significant relationship between food insecurity and lack of education which is illiteracy”. This was supported by the data collected from 22 low income countries with the inclusion of South Africa and the data showed high levels of starvation which was correlated with low levels of education amongst those citizens FAO (2005). As earlier indicated, “demographic factors play a decisive role in determining household food security status, for instance households whose heads and breadwinners are educated are often more likely to be food secure” (Kidane, Alemu, Khundhlande, 2005; Bartfeld & Dunifon, 2006; Abebaw & Ayalneh, 2007; Shiferaw, et al. 2005). Equally, “households with relatively more mouths to feed for instance and have a



higher dependency ratio are more likely to face food insecurity” (Kidane, Alemu, Khundhlande, 2005; Bartfeld & Dunifon, 2006; Abebaw & Ayalneh, 2007; Shiferaw, et al. 2005). The same applies to women-headed households which are exposed to gender specific obstacles that negatively affect their productive capability to provide food despite being employed. In essence, females to a greater extent do not earn as compared to their male counterparts (FAO, 2008; Bartfeld & Dunifon, 2006). This is also attributed to some unpaid domestic work they do in their households which men cannot do. More so women are generally less educated as compared to their male counterparts in middle to low income countries (Bartfeld & Dunifon, 2006).

Within the Eastern Cape Province “lack of education is a clear obstacle as numerous individuals are not part of an educational environment” and this is the perpetrating factor to food insecurity (Unusan, 2007, p.50). Considering the influence of knowledge on food consumption and food preparation, “the people’s level of education is argued to affect their food security status” (Unusan, 2007). Age is a demographic factor which is “closely connected with an individual’s level of education and this is indicated to indirectly influence food security” (Gundu, 2009). Children are indicated to be “more vulnerable to food insecurity due to a lack of knowledge and access in comparison to older individuals” and this clearly reveals the role that education plays in determining food security. Baiphethi and Jacobs (2009) allude to the fact that lacking education does not only influence utilisation but inadequate education also “leads to higher unemployment rates and lower paying jobs” and this has a direct effect on food security (StatsSA, 2010). The incidence of insufficient education “is a characteristic of low income areas and informal settlements and this is therefore quite relevant to this study since” Mhlontlo municipality

is in a low-income area. This simply implies that the lack of education eventually impacts household's capability to satisfactorily produce and make the most of food sources. As will be discussed further, "utilization and access are pillars of food security and these are key factors in establishing the individual well-being" (Kalpana Sastry *et al.*, 2011, p.392). When food utilisation and household well-being are not optimal, "food insecurity" exists and if insufficient education cause "food insecurity", it may be rational to conclude that the number of under educated individuals should be considerably reduced in Mhlontlo Municipality (Unusan, 2007, p.50).

#### **2.4.1.2 Objectives of Education**

Literature strongly supports that better education leads to a better standard of living because it helps an individual to obtain the capacity to engage in the labour force so that they get a reasonable income to sustain household food security (Robustequ, 2012). Levels of education have also been examined for their effects in determining income inequality. Research conducted by Alderson and Nielsen, (2002); Barro and Lee (2000), (2000); Nielsen & Alderson, (1995) showed that attaining higher levels of secondary education, reduced income inequality thus making them to be food secure because of the higher income they obtain. Barro and Lee (2000) found that there is a negative relationship between primary education and income inequality since people with primary education do not earn more, so it does not make huge difference in the reduction of income inequality in order to attain food security, but there is a positive relationship between income inequality and higher education enrolment. According to Alkire (2005) educated people are likely to find jobs because they always have valuable objectives like having access to enough food for their households. Education is seen as the ability of the

poor rural people to escape from hunger and poverty (Sen, 1999). Thus, education is essential to stimulate agency (Sen 1999). “Agency refers to a person’s ability to pursue and realize goals that he or she values and has reason to value” (Sen 1999). However, (Alkire 2005) suggests that “agency” can be understood as the propensity of rural poor to dodge poverty and hunger using their own alternative means. This simply implies that when one is educated they are more likely to find a job and get the capacity to use the resources they use and own more rationally. This is because educated people plan objectively for their long-term food sources in order to ensure a prolonged and stable access to food in their household (Barro & Lee 2000). More so, “education influences food security through the economic production channel especially in rural areas like Mhlontlo municipality this is typically achieved through the increase of agricultural productivity and efficiency in that sector to secure adequate household food” (Unusan, 2007). This can be done by “increasing the amount of output per unit of input, and by choosing and allocating in the best way the inputs of production. Finally, education provides an inner contribution to food security, making people more ambitious and self-confident because being educated is considered a relevant weapon against feelings like shame and lack of hope, whose overcoming is indispensable to promote food security” (Robustequ, 2012).

#### **2.4.2 Household income**

Revenue generated by the members of the household is regarded as household income, it includes grants, loans, salaries, pension’s, amongst others. Thus a “lack of income significantly influences food security by prohibiting adequate access and utilization of food sources” (Hallberg, 2009). In this narrative, discussions about the association between

“food security” and the “level of income will be deliberated in light of this notion, failure to access and utilise food according to one’s needs suggests that food insecurity exists”. A higher level of income augments “food security” on the other end, lower income directly leads to food insecurity, which is an absolute consequence of poverty and or lack of financial resources (Rosen & Shapouri, 200). (Du Toit, 2011) adds that “in addition to affecting access to food, income is a direct determinant of food utilisation and food security. Therefore, the challenges that low-income households face with regard to inadequate access to food is a matter worth considering when developing initiatives and programmes for improving food security in the Mhlontlo municipality. A lack of financial resources is argued to be more dominant in developing countries and in low income communities, where food security is a direct outcome of poverty” (Hallberg 2009; Rosen & Shapouri, 2001). Unemployment on the other hand is seen as the most direct contributing factor to poverty in households, thus it is a considerable cause of food insecurity (Du Toit, 2011). Moore so, Low-income households and or individuals are believed to have scanty access to long term sustaining quantities of food due to the higher prices of these products as opposed to their low income (Farm and Food Policy Project (FFPP), 2007, p.2). “Households within low income categories are afforded fewer opportunities to access a variety of food sources and poverty amongst households in the low-income areas is likely to exacerbate food insecurity” (Rosen & Shapouri, 2001).

Research indicates that “inadequate distribution and a lack of sufficient income is a contributor to the inability of households to access available food” (Hallberg, 2009). Furthermore, Hallberg (2009) mentions that “the efforts made to improve food insecurity, which is often brought forth by a lack of access to dietary sources, have focused on

unsatisfactory income and the distribution of food”. The “2010/2011 Income and Expenditure Survey (IES), the average household income for black African households was R 69 632 per year” (Stats SA, 2012). In addition, “black Africans form up to 76% of the South African population; however, they earn only 44.6 % of the total annual household income”. In terms of the income indices in South Africa, “this population falls within the lower to medium income groups” (Stats SA, 2012). The results of the IES are a clear indication that low income has a direct role that it plays in impacting food security, because, “Black Africans form 76% of the population yet they earn only 44.6% of the total annual household income”, which is resulting in Black Africans suffering the most from food security (Stats SA, 2012).

A topical study by Abrahams (2012) in the Eastern Cape noted that households do not receive sufficient income to meet their food needs at a satisfactory level. Food remains unaffordable in most of these households due to low wages and households’ income and this is worsened by household spending on municipal services, transport, education, accounts and health since households cannot live without these goods (Eastern Cape Community Health Survey (ECCHS), 2014). Limited income and limited opportunities to generate income are found to be factors contributing to household food security in the Province. Households with low incomes particularly those who are casually employed and those who depend on government social grants find a lot of financial stressors since healthy food is becoming more expensive in which they struggle to afford and they face circumstances of poverty (Abrahams, 2012). Households with low incomes often cut costs by switching to cheaper food since food prices are more flexible than transport costs (Paul, 2012). Insufficient income is defined as being the major barrier to safety and

healthy eating (Paul, 2012). As a result, some households are cutting their meal size, skipping meals not eating maybe for a day due to lack or insufficient income to buy enough and healthy food (ECCHS, 2014). Chances are slimmer “for households in affluent neighbourhoods who are higher income earners to be food insecure” (Shiferaw, et al. 2005). This means that availability of money through a sustainable income has a direct effect on the household’s access to sufficient food (Paul, 2012).

#### **2.4.2.1 The role of household income on food security**

South Africa faces “a structural household food insecurity problem, the prime causes of which are widespread chronic poverty and unemployment which is directly tied to income” (HSRC, 2007). The magnitude of food insecurity in South Africa varies from household to household and or from within households, since it can be prolonged or momentary, and in both phases the experience of food insecurity may be in great intensity FAO (2005). This means that “the food security status of a household and its members is very sensitive to livelihood stressors, and thus changes over time. The rapid food price inflation during 2007- 2008, for instance, considerably increased the number of food insecure people globally from 900 million to more than 1 billion” (FAO, 2009). Persistently low-income households, which are generally food insecure are more exposed to food price shocks since their largest portion of income is always channelled towards securing food. In this context, families that might be slightly food secure before a price shock are undoubtedly susceptible to severe transitory or rather intense chronic food insecurity later, thus increasing burden to the governmental subsidies and policy regimes to eliminate the spread of prolonged food shortage (Hart, 2009). Households in South Africa can be classified as poor or non-poor depending on whether the household income is sufficient

to meet the basic food and non-food needs of household members or whether the income is below or above the relevant poverty line (Altman, Hart & Jacobs, 2009, p.7). This was determined by comparing the per capita household income with the poverty lines this is because the food poverty line is a significant measure of welfare since it is known that relatively poorer people tend to allocate much of their revenue and savings towards food (FAO, 2012, p.2). A research study by the Food and Agriculture Organization declared that “South Africa is regarded to be a food secure country which is an accomplishment for developing countries that are renowned for their significant struggles with food insecurity” (FAO, 2012, p.2). Nevertheless, research has specified that many people in low income families within formal and informal settlements around South Africa are not food secure at all which is the aim of this research as well to establish the role that certain demographic factors play in determining “food security” in Mhlontlo municipality (Altman *et al.*, 2009, p.7).

#### **2.4.3 Standard of living**

The “United Nations Development Programme report” (UNDP, 2006) reveal that “food insecurity is closely linked to poverty, income and unemployment”. The report aims to reveal that “poverty and unemployment have a strong relationship with food insecurity because in most cases food insecurity manifests in multiple deprivations”. The explanation of the report asserts that “food insecurity begins with the loss of employment, which in turns leads to a significant degradation in the standard of living of the human being” (UNDP, 2006). The presupposition of the report (UNDP, 2006) was that living in poverty generates additional socio-economic difficulties which thereby limit and or discourage people to hunt for employment. Thereby, forcing people to remain trapped in

long term food insecurity challenges. Therefore, the aim of this research is to reveal that a lack of income due to unemployment has a direct negative impact on the standard of living which ultimately plays a role in determining food insecurity in the Mhlontlo municipality and South Africa in its entirety as explained below.

#### **2.4.3.1 Role of standard of living on food security**

It is generally alleged that low-income family unit are concentrated largely in poor municipalities where the standards of living are regarded as poor (UNDP, 2006). (Aliber, 2009) express the justification revealing the reasons why such conventions can be conflicting. This is because data from the Income and Expenditure Survey (IES) of 2012 revealed that “serious food insecurity is widespread and is found in similar proportions in rural districts and metropolitan municipalities”. This is meant to disentangle the argument that standard of living is more prevalent in poorer rural district municipalities such as Mhlontlo municipality than the Nelson Mandela Metropolitan municipality where the assumption is that the standard of living there is better off. Aliber (2009) maintains that a study conducted in South Africa on the relationship that exists between standard of living and food security revealed that, while the worst districts hit by food security in 2009 were “Umzinyathi in KwaZulu-Natal and OR Tambo in Eastern Cape, this may change over time because the depth of food insecurity varies within and between households because it can be chronic or transitory, and both can be experienced at a great intensity” FAO (2005). This simply implies that the “food security status” of a household is very subtle to livelihood stressors, and thus varies over time. Instantaneously this is a clear indication that the standard of living has an imperative role that it plays in determining food security; however, that role is not motionless because the standard of living can be understood



from various indicators, which are inclusive of level of income and level of education. It is also key to recollect that an evaluation of the role that constitutes food insecurity when looking at the standard of living can vary a slightly from one period to the next, somewhat due to changing conditions in the socio-economic factors Aliber (2009).

The other argument when understanding the role that standard of living plays in determining food security. It is also essential to understand that there are estimated random variables which have been aforementioned and some of which are not completely accurate depending on the period in which the data is under consideration as per the socio-economic factors. In an “HSRC working paper”, Aliber (2009) shows that had if one is to look at the socio-economic policies that focus on food security nodes based on the standard of living they will not certainly extent to largest number of food insecure in rural district municipalities. This clearly poses challenges for the socio-economic policies which are aiming to instantaneously save households with poor standards of living out of severe food insecurity. Hence “there is often a policy tension between focusing on poor people or on poor areas based on the accuracy or lack thereof of the given standard of living indicators” Aliber (2009).

## **2.5 Food security**

“Food security” is defined as the status quo at which people have enough physical as well as economic access to healthy food every day (FAO, 2005). According to the Eastern Cape Socio Economic review and outlook (2013) the province still faces significant social challenges as characterized by high levels of food insecurity, “which is estimated to be 78% which is even higher than the national average of 64%” and its households are classified as food insecure. It has also been found that most of the food insecure

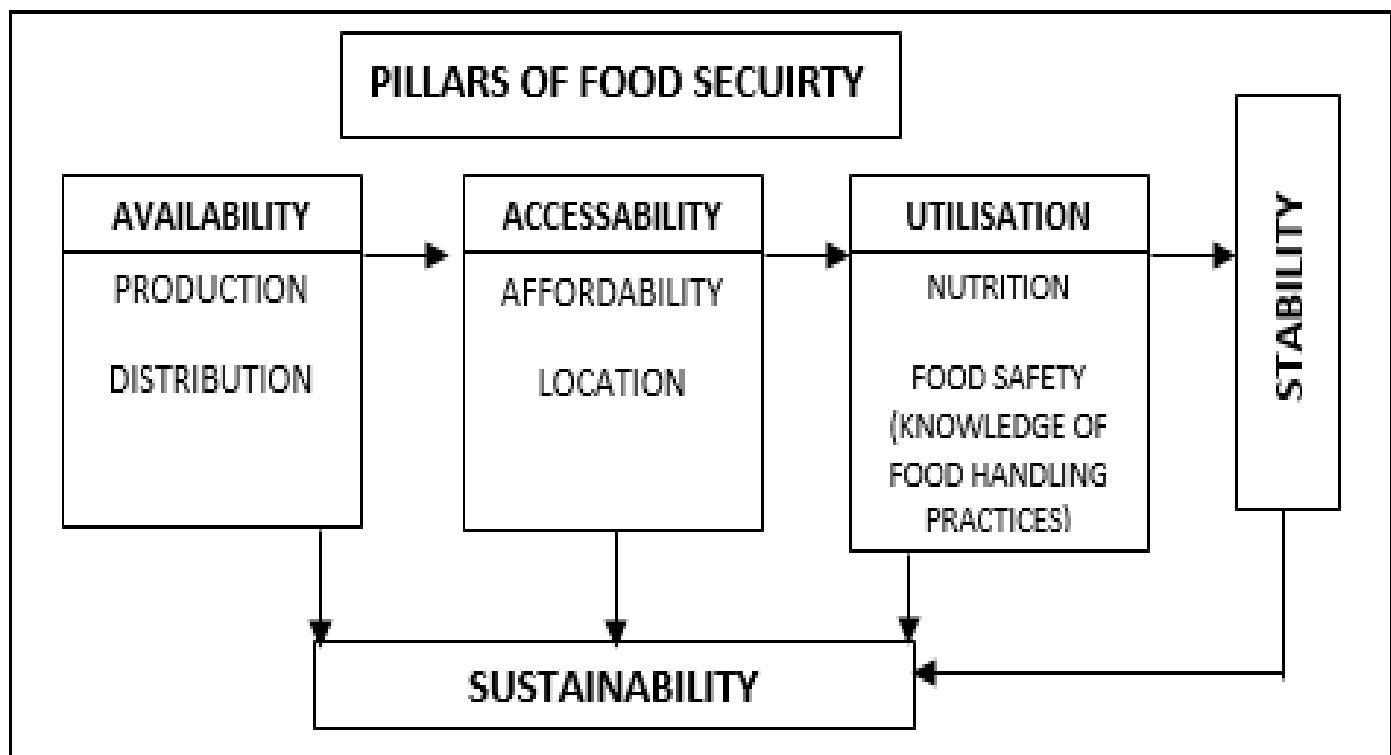
households are in rural areas and they have large family sizes which are mostly owned and headed by black women (ECSE, 2013). Attempts to establish a working definition of food security is underway, it is also attributed to “the lack thereof dates back to the Food and Agriculture Conference in 1943” (Weingartner, 2000). The conference embraced the concept of a “secure, adequate and suitable supply of food for everyone” as the definition for food security and in reaction to this concept bilateral institutes were established in economically stable countries to place their surplus in charities in form of food aid (Weingartner, 2000). This led to the formation of the World Food Program (WFP) in the 1960s. This was an immediate response to curb the challenge that was prevalent in developing countries of food shortages through giving out food aid packages (FAO, 2000). Nevertheless, it was understood that food aid could negatively impact food production in target countries and this led to the creation of “conditionality to the way food aid should be distributed and the concept of food for development was introduced” (Weingartner, 2000). Hence, currently the FAO has put forward an unanimously accepted meaning for food security which incorporates all the dimensions suggested by the literature mentioned above in one way or another. Basing our argument on this definition, food security is achieved when “all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life” (FAO, 2000).

### **2.5.1 Pillars of food security**

“Food security” is ascertained when “all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life” (FAO, 2000). From the given

definition, there are elements of the definition which are very strong variables and these have been denoted to be the “pillars of food security”. These consist of “food availability, access and utilisation, stability, sustainability and further include supplementary components such as distribution, income, food safety and food knowledge. Food availability, access and utilisation are intertwined and interdependent so as to ensure food security and these pillars may also be identified as the key characteristics of food security Gregory” (2005, p.2144). Therefore, “if food is not readily available or accessible to all individuals and safe to utilise, the pillars of food security are not functioning correctly; hence, the possible existence of household food insecurity. For example, in South Africa the most severe cases of inadequate food access were indicated in the Free-State Province with 33, 5 % of households revealing inadequate access to food” (Stats SA, 2010, p.6). These results were based on the Rammulotsi/ Viljoenskroon area and this was a clear suggestion that per chance food access in target areas may be inadequate or unavailable and hence there is a likelihood of “food insecurity” occurring. Therefore, identifying possible “food insecurity” indicators while suggesting possible alternatives based on the demographic features that have a role to play in determining food security is what furnishes the central motivation for this study. It is therefore imperative to identify and improve the food security pillars which contribute to food insecurity because they may assist in augmenting the access and utilisation of sufficient quantities of available food within food insecure provinces in South Africa with most especially direct illumination on Mhlontlo municipality as the reputational zenith of this study (Burlingame & Dernini, 2011, p.2285). Folke (2006, p.253) points out the “importance of developing the pillars of food security”, which are relevant, adaptable, sustainable and less susceptible to failure on

household level. Gregory (2005, p.2144) on the other hand stated that “vulnerability to food insecurity can be minimised by improving aspects of the pillars and the pillars themselves. In support of the changes”. Gregory (2005, p.2144) mentioned the “increasing of national and subsistence food production, improving distribution and enhancing the overall access to food”, that is to ensure food security.



Adapted from (FAO/FIVIMS, 2008, p.1)

**Figure 2.2:** The pillars of food security – modified from theoretical framework.

The diagrammatic framework above is an illustration of the explanation of the pillars of food security as adapted from (FAO/FIVIMS, 2008, p.1). The aim of the visual aid is to give the depiction that food security is strongly supported by three pillars which are availability, accessibility and utilisation of food and these are intertwined and interdependent and this is what maintains their stability to ensure the sustainability of food

security (FAO/FIVIMS, 2008, p.1). This simply implies that the availability and utilisation of food in the absence of accessibility will lead to food insecurity because stability will be lacking and this applies to the other pillars, because they work hand in glove to ensure sustainability in food security. The illustration asserts that “food availability, accessibility and consumption are considered to be sufficient components to ensure food security if developed and managed correctly. Household food security and the policies associated therewith focus on the relationship between food availability and access as well as food access and utilisation. Hence the proposition that each of the individual components is dependent on the other to achieve the desired outcome in food security” (Diskin, 1995, p.31). The concurrent application of these are imperative as each pillar cannot solely warrant food security due to complementary dynamics such as education, income, and standard of living. These factors directly impact each pillar of “food security” (Diskin, 1995). Even though food may be available, “a lack of income results in some households not being able to access food, which contributes to food insecurity. Income is a prime example of such a supplementary factor, as a lack thereof will limit access, and consequently, utilisation and food security (when considering the correlation and dependency between the components)” (FFPP, 2007, p.2). In semi industrialised countries such as South Africa where disadvantaged families are present in large numbers, “food utilisation is regarded as an obstacle due to poor access rather than inadequate food availability” (World Food Programme (WFP), 2005, p.2). In addition, the “food security pillars are dynamic as they are influenced by various factors such as increasing population demands, food production, markets and consumption, in addition to the overall state of the food economy” (FAO, 2006, p.3). “Food security and household

well-being are also affected by the failure or success of the food pillars, as food security is based on the pillars of food security” (FAO, 2006, p.3).

### **2.5.2 Meaning and cost of food security in Mhlontlo Municipality**

The meaning of “food security or insecurity” which is the lack thereof is not as obvious as it may seem in South Africa (Heady & Fan, 2008). This is because no specific and or acceptable measure of food security has been standardised in South Africa. Currently there are no standardised ways of monitoring food security or insecurity as well HSRC (2007). This is not a satisfactory state of affairs, “in a middle-income country that has such a high proportion of food insecure households. There are numerous challenges in identifying targets and strategies for household food security because food security is multidimensional in nature, making accurate measurement and policy targeting regimes a challenge” (HSRC, 2007). There is sometimes a bridging gap between national level standard food security and the actual state of affairs or experience of households in terms of availability and accessing of food. This is because “access to adequate food at a household level increasingly depends on how food markets and distribution systems function rather than only on total Agro-food output” (Heady & Fan, 2008). In addition, no clear and concise measure has been established defines food security, both at local and or national level, which may be important to permit the setting of “food security” goals and devising monitoring systems. Based on the argument above, “food security cannot be understood in isolation from other developmental indicators such as social protection, sources and levels of income, levels of education, rural and urban development, changing standards of living, health, access to land, water and inputs, retail markets, or education and nutritional knowledge” (Van der Walt, 2004). The “multiple factors that influence

access to food are not well understood, and this impact negatively on the ability to identify appropriate strategies to improve food security in low income municipalities such as Mhlontlo municipality” (Heady & Fan, 2008). These gaps have a detrimental role to play in restricting the aptitude of policy makers to address “food security” issues. Therefore, these become deep institutional barriers to successfully addressing the food security challenges that district municipalities are currently facing (Heady & Fan, 2008).

### **2.5.3 Variables of Food security**

The “Centre for Poverty, Employment and Growth (CPEG)’ at the “Human Sciences Research Council” (HSRC, 2007) was established to “identify approaches to halving unemployment and poverty between 2004 and 2014 on a sustainable basis” (HSRC, 2007). This is denotative to that attaining household level “food security” is a critical focus area in South Africa as part of the contribution of this research. Rising food prices, “particularly of maize and wheat which are the staple diet of the poor in South Africa, poses serious problems for the rural poor as most are net buyers of food” (FAO, 2009). Fresh evidence from the (FAO, 2009) is also supported by independent sources (Heady & Fan, 2008). This researcher suggests that “food prices will increase steadily over the next decade even if there are some fluctuations and the occasional drop in prices. Given increasingly strong linkages between the local level, national and international commodity chains and economic networks, even remote rural households in South Africa are affected by changes in these networks”. Unless there are new directions on commodity chains, “the poor households will increasingly be forced to allocate a greater proportion of their income to food, with the result that diets will become less diverse, lower in quality, and energy intake will drop as people try to cope with the situation” (Evans, 2009). Most

intensely affected are the landless, the rural poor, and female-headed households which clearly are a clear significance of the role that education, income and standard of living play in determining food security (FAO, 2009).

#### **2.5.4 Key factors in determining food security**

As aforementioned the relationship that exists between standard of living, sources and levels of incomes and household “food security” is unclear. Even though records may state that South Africa is food secure as a country, a significant number of households across the country are practically “food insecure”. To understand “household food security status” in this country, “it is necessary to understand how the workings of the food distribution system and accessibility of a household determine its utilisation of food” (Aliber 2009). There are several problems relating to distribution and accessibility of food that need to be captured and addressed, “since practically food insecurity would be addressed by expanding employment opportunities, through enhancing household incomes and standards of living” (Du Toit, 2011). Employment in South Africa has grown considerably since the mid-1990s upon independence, but the employment is not enough to solve issues of income distribution meaningfully. This has had a direct negative impact on food security, because “income security is an essential ingredient to addressing food insecurity”. Evidence has shown that “social grants have played an important role in improving household food security since 2001, but that improvements in employment status are also important” (Van der Berg, 2006). “Transitory food insecurity refers to individuals’ lack of power to command resources on temporary basis” (Aliber, 2009). This is because “a person could be food secure now but this may not be true in the immediate future for various reasons as particularly evident in casual or seasonal labor. Hence this



could be as a result of exposure to the vagaries of nature; the nature of work and the limited access to available lines of credit which are key factors in determining food security” (Van der Berg, 2006).

### **2.5.5 Factors affecting food security**

South Africa, as part of Sub-Saharan Africa, “is identified as a food secure nation according to the current Millennium Development Goals (MDG) reports” (United Nations, 2011). However, “food security has been a global issue for the past several years, with South Africa even highlighting the issue in 1994”. In “Section 26 and 27 of the South African Constitution of 1996, the basic principles of food security state that, each individual is entitled to adequate access of available, safe and sufficient sources of food and water on a national as well as household level. The principles of food security and the priority thereof”, emphasised by the Constitution (1996). This have required the development and execution of policies and programmes by the ‘Department of Agriculture, Forestry and Fisheries” (DAFF) to thwart food insecurity in the state. However, portentous statistics on the subject of individual households recognised that food insecurity does actually exist in South Africa at household level and particularly in low income municipalities, which depicts the role that income plays in determining food security (Altman *et al.*, 2009). Apart from the given factors affecting food security, “the prevalence of food insecurity in South Africa may also be a consequence of the increase in the global demand for food as well as the inability of the government to meet those demands through current agricultural production” (Thornton, Ocasio, W., & Lounsbury, 2011). With this “evident increase in food demands and the global economic recession, food prices escalate, ultimately affecting food availability, accessibility and stability,

thereby creating food insecurity in vulnerable communities such as” (Mhlontlo & Jacobs, 2011).

#### **2.5.6 A critical analysis of the of the food security status in Mhlontlo Municipality**

In view of “large-scale unemployment, as well as the present economic downturn, it is probable that reliance on grants will continue, if not increase in Mhlontlo municipality”. In such a highly unequal and uneducated society, “with high unemployment, redistribution through income transfers is essential to curb food security challenges” (Pinstrup-Anderson, 2009). However, it is essential that innovative and expressive solutions are conscripted to inspire the disregarded work-seekers in Mhlontlo. This may be an initiative of inclusion into economic participation. Ultimately could form part of “a long-term food security strategy. South Africa has for long been food secure as a nation Faber & Wenhold, 2011), this being the case, however, food insecurity at the household level has become a challenge. The majority of South African households with the inclusion of Mhlontlo municipality is food insecure (Altman et al, 2009). This is further supported by the following estimates – 50% by the “National Department of Agriculture” (2002), 52% by Labadarios, Davids, Mchiza, and Weir-Smith (2009), and 80% by Jacobs (2009). Literature has given the indication that food insecurity is be caused by several factors, following the usual practice, these factors can be classified into two broad categories which are the immediate and underlying community conditions (Faber & Wenhold, 2007). Under the immediate conditions, there are low rates of agricultural production; low access to food resulting from low income; low level of education and low standard of living (Faber & Wenhold, 2007). On the other hand, underlying community conditions include existing factors which could impinge availability, accessibility, utilisation, and stability of food”

(Faber & Wenhold, 2007). For instance, “if a municipality like Mhlontlo is characterized by low income earners and low levels of education this has a direct impact on food security because the productive capabilities of farmers could be hampered as they will have limited access to new technologies and credit. The food security status of the community can also be affected negatively by bad local market conditions which could result from ill-designed domestic and international trade policies” (Pinstrup-Anderson, 2009, p.5) and “these could reduce access to food by the community from local as well as outside sources. In addition, the food security status of the Mhlontlo municipality could be thwarted by HIV and AIDS”, as a pandemic that harms economically productive sections of the society as determined by education, the standard of living and the levels of income.

## **2.7 Chapter summary**

Studies of “food security” in South Africa are still limited. Those available are area specific. They focus more on provinces alleged to be prone to poverty. These “studies to some extent might shed light on the status of food security situations in these areas. But, their utility to inform policy making at the national level is doubtful due to their apparent assumptions of heterogeneity characterising food insecure areas”. In conclusion, it is essential to acknowledge that a synopsis of literature in this chapter revealed that mandate of this section of the research was to unpack the conceptual framework surrounding all the factors which determine food security and the roles they play in Mhlontlo municipality and in South Africa at large. Furthermore, upon unpacking and detailing the theoretical structure, this section of the research discussed the theoretical framework which was guiding the research and its relevance on food security. The purpose of the next chapter is to give a description of the research “design and

methodology” that was used for this research project. The chapter will conclude by clearly outlining the methods of analysing data which were used in this research for the transcending chapter.

## **Chapter Three: Research methodology**

### **3.1 Introduction**

The previous chapter is the literature review regarding the related literature of education, income, standard of living and food security in South Africa and abroad. The current chapter discusses an overview of the research methodology to be used in the proposed study. It also refers to a group of methods or “ways of collecting, organizing and analyzing data” (Polit & Hungler, 2004). It refers to the plan and procedure used by the researcher when conducting a research study (Leedy & Ormrod, 2001). A good methodology used in data collection determines the quality of data obtained and the reliability and validity of the study will not be questionable (Hair, Wolfinbarger, Ortinau & Bush, 2008). The researcher in the current chapter attempts to provide more detail of the research methods, the overview of the method, sampling techniques, sampling design, sampling tools used in data collection and population. This chapter also discusses how the data was collected captured and analysed statistically.

### **3.2 Research design**

According to Polit, Beck and Hungler (2001), research design is the overall strategy a researcher follows to answer research questions, to attack a research problem and to test research hypotheses. Parahoo (1997) described research design as the procedure of how, where and when data will be collected and analysed.

A quantitative research design was used in the present study. According to Johnson and Christensen (2008) in a quantitative research approach, the most common research objective is to predict, explain and describe while the qualitative approach aims at constructing and discovering the research findings. The purpose of the quantitative

approach is to test hypotheses then analyze causes and effects and make predictions while the qualitative approach concerns the long process of the understanding and interpretation of social interaction of the research findings (Lichtman, 2006). The present study sought to test hypotheses and at the same time predict and describe the relationship existing between the study variables and thus why a quantitative approach was adopted in the proposed study.

### **3.3 Research methods**

The study employed the quantitative approach. Quantitative (i.e., numerical) data was collected using the research instrument from the sample of participants. The quantitative method was chosen due to its convenience for data analysis purposes as numerical data is more readily manipulated than qualitative data. Quantitative data is also more objective than qualitative data, which helps to ensure the greater validity and reliability of research results, allowing for wider applicability of the recommendations emanating from the results.

### **3.4 Population**

Hair et al., (2008) states the population is an recognisable set of interests to the researcher and that are useful to the information. It is the aggregate that has an equal chance to be chosen in the sample to be studied. The present study investigates the relationship between education, income, standard of living and food security amongst Mhlontlo residents. Therefore, the population consists of all Mhlontlo local municipality citizens. The total number of all the residents can be estimated to be (N = 7,794).

### **3.5 Sample and Sampling procedure**

A “sample is a small part of the population with the same characteristics as those in the entire population” (Hair *et al.*, 2008). According to Welman, Kruger and Mitchell (2006), a “representative sample is a small image of the population”. The sample was drawn through the probability sampling method of cluster sampling. This method divides the population into mutually exclusive clusters according to identifiable groups through the use of a geographical map. In order to have a 95% confidence level, a sample of 373 households was calculated and subsequently drawn. The sample was obtained by selecting a random household on the aerial map within each identified cluster and then selecting every household until the entire sample was drawn.

### **3.6 Research instrument**

#### **3.6.1 Household hunger measure**

**Background:** The Household Hunger Scale (HHS) was used to measure household hunger. According to Ballard, Coates, Swindale and Deitcher (2011), it is a reliable measure of household food insecurity.

**Items:** The instruments have three items in the HHS and participants can respond in the affirmative or can skip to the next item. According to Ballard *et al.*, (2011), these items include going to bed hungry, running out of food or not having food for a whole day and night. Questionnaire items help in collecting huge amounts of data.

**Scoring:** Responses are scored by coding 1 for responses of ‘sometimes’ and 2 for responses of ‘often’. These scores are then summated and are used as the key to indicate the household hunger of a particular household. Households may be classified as

experiencing severe or moderate hunger, little or no hunger. The best measure of central tendency for the HHS will be median household hunger.

**Reliability and validity:** Internal consistency of the instruments was measured through Cronbach's coefficient alpha. Through the use of different data collection methods, the findings of the proposed study were validated. The instrument was validated for multi-cultural use in order to make it unbiased against any other group.

### **3.6.2 Living standard measure**

**Background:** The Living Standard Measure (LSM) was used as a tool to segment and identify groups of people with similar patterns. According to the South African Audience Research Foundation (SAARF, 2014), this measure replaced the use of demographics for segmentation to a multi-variate market segmentation approach.

**Items:** Section one asked participants about the goods they possess in their households. Section Two asked participants about amenities in their households and while the third section asked if they owned any vehicle, washing machine or had a swimming pool in their households. In all these items, participants can only reply with responses of 'true' or 'false'.

**Scoring:** After the questionnaire was completed, scores were done according to the weighted scale then summated. The summated scores were then related to LSM categories, which are divided into ten categories.

**Reliability and validity:** According to the SAARF (2014), the LSM is frequently updated and validated and has gone through revisions yearly between 1995 and 1999. The LSM



was also regarded as the strong measure for standard of living and wealth (Martins, 2012).

### **3.7 Data Collection Procedure**

Researchers view questionnaires as one of the major tools used for collecting data from study participants and is mostly used worldwide. In this present study, a “self-administered questionnaire” was employed as a “data collection instrument”. “Self-administered questionnaires” are one of the less expensive and quick ways of collecting data. They offer anonymity, which encourages respondents to provide truthful information. Through self-administered questionnaires, much information can be acquired. The data was collected by field workers. The questionnaires were distributed in Mhlontlo Local Municipality at respondents’ homes. Where needed, the questions were explained to the respondents according to the language of their choice.

### **3.8 Data capturing**

All data was coded and captured to Microsoft Excel 2010. All the coded information was further imported to the “Statistical Package for the Social Sciences” (SPSS) version 19.0. In summarizing the conclusion of the study, data analysis was used. All questionnaire items relevant variables were coded before they were captured. The Cronbach’s alpha co-efficient was also computed.

### **3.9 Data Analysis**

Data analysis is used by the researcher to get useful and usable information and can help describe and summarize the conclusions of the entire study. Since the present study is the quantitative research design, “the data was analysed using both descriptive and inferential statistics”. To test the significance of relationships among the study variables,

inferential statistics was used. The chi-square method tested the relationship between income, education, standard of living and household hunger. As the research at hand was a descriptive study, which was intended to explain the relationships among the study variables, the data was described and presented in a clear manner through the use of central tendency, dispersion, and graphical techniques. The data in the current study was analysed using SPSS. All items and variables were coded before being entered into the computer.

### **3.10 Ethical considerations**

All the participants in the present study were fully informed about the purpose and the aim of the study, so that they could supply truthful information. As the participation in the present study was voluntary, no one was forced to take part. Respondents' personal information were not to be recorded, no sensitive information was exposed, and all such information was kept strictly confidential. All participants were treated with respect and dignity such that they did not experience any physical, mental or emotional harm. All findings were reported to the participants. No information was hidden. The covering letter from the university was provided to the participants when the researcher sought permission to conduct the study in the district for the fieldworkers to be trusted and freely allowed to conduct the research.

### **3.11 Conclusion**

The study's descriptive field "survey design enabled the researcher" to gather the quantitative data necessary to test the pre-determined objectives and associated hypotheses. As such, the research instruments and sampling methods were accordingly tailored and geared towards meeting the objectives. Once collected, the quantitative data as analysed with the view of not only addressing the objectives, but also making appropriate recommendations in contributing to the uncovering of the research problem under investigation.

## Chapter 4: Results

### 4.1 Introduction

The previous chapter dealt and provided the research methods that were used by the researcher to collect data. The chapter also described the research methods used in the entire study as well. Descriptive statistics such as pie charts, graphical tables and bar charts were used to make the analysis results clearer. The results in relation with the hypothesis will be presented in the current chapter as well. In order to present the results clearly, the present chapter will start with demographic and occupational information linking them with the questions and hypothesis. Correlations and descriptive statistics were used to test the hypothesis. The interpretation and the analysis of the data obtained through questionnaire from the participants is examined in the sections below.

### 4.2 Internal consistency

**Table 4.2: Cronbach's Alpha for Living Standard Questionnaire**

**Reliability Statistics**

Cronbach's Alpha	N of Items
.70	29

Table 4.2 above shows the "Cronbach's Alpha" for the living standards measure. The alpha coefficient is 0.70 which is above 0.60 thus making it acceptable as a good reliability.

**Table 4.3: Cronbach's Alpha for Household Hunger Measures Questionnaire**

Reliability Statistics	
Cronbach's Alpha	N of Items
.987	3

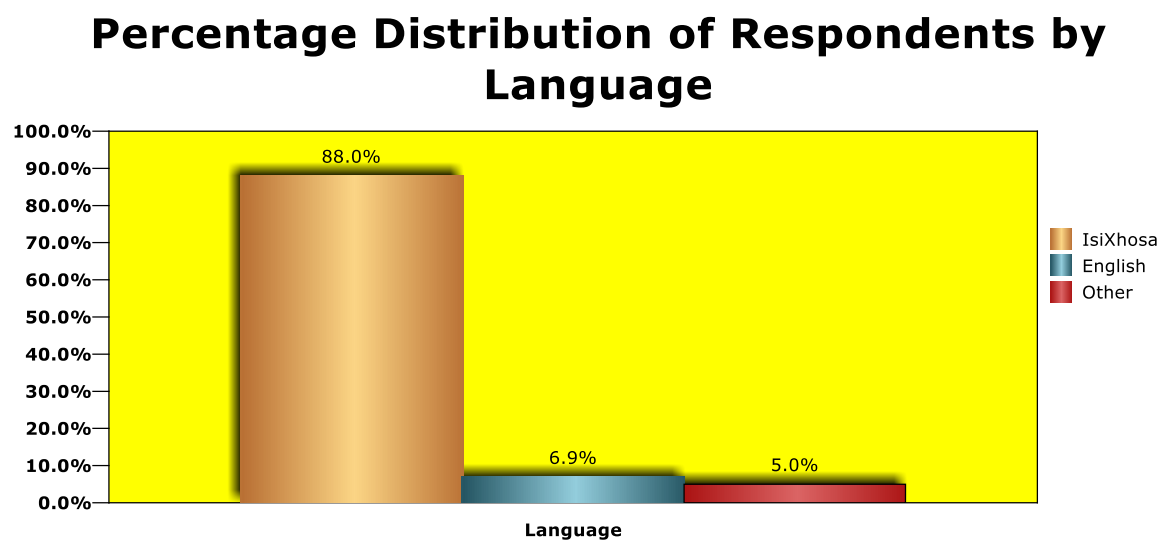
Table 4.3 above shows the “Cronbach's alpha” for the instrument which was measuring household hunger. The coefficient alpha is 0.987 which show that the instrument is reliable to test for household hunger.

### 4.3 Demographic information

#### 4.3.1 Language

The graphic presentation of language distribution of the sample is presented in figure 4.1 below. The majority of the respondents' home language (88.1% or n=89) is Isixhosa, 6.9% (n=7) of the sample their home language is English while 5% (n=5) of the sample had other home languages.

**Figure 4.1: Language distribution of respondents**



### 4.3.2 Age

Figure 4.2: Age distribution of respondents

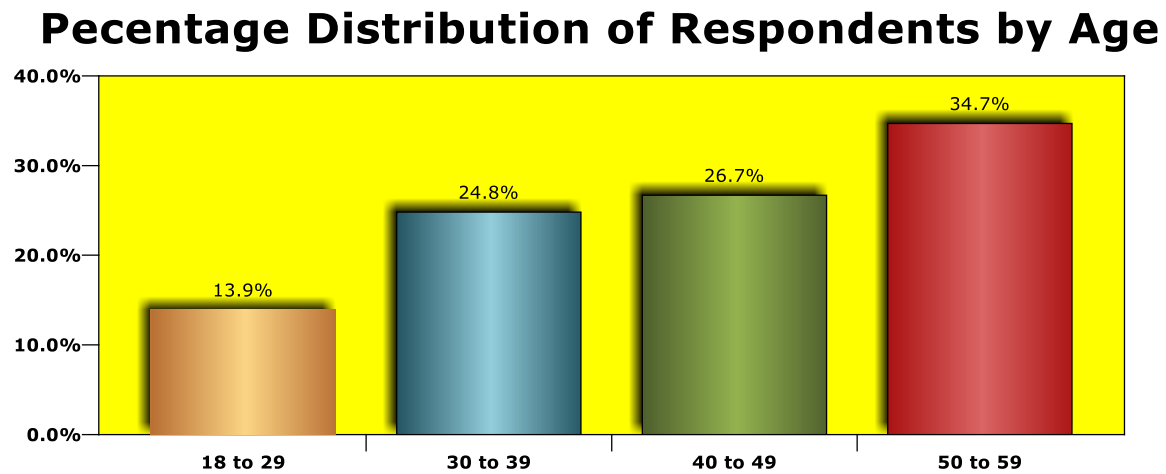


Figure 4.2 shows that 34.7% (n=35) are in the age group 50-59 years, 26.7% (n=27) of the respondents are in the age group of 40-49 years. A 24.8% (n=25) of the respondents falls in the 30-39 age group. Fourteen respondents (13.9%) fall in the age category of 18-29 years.

### 4.3.3 Gender

Figure 4.3: Gender distribution of respondents

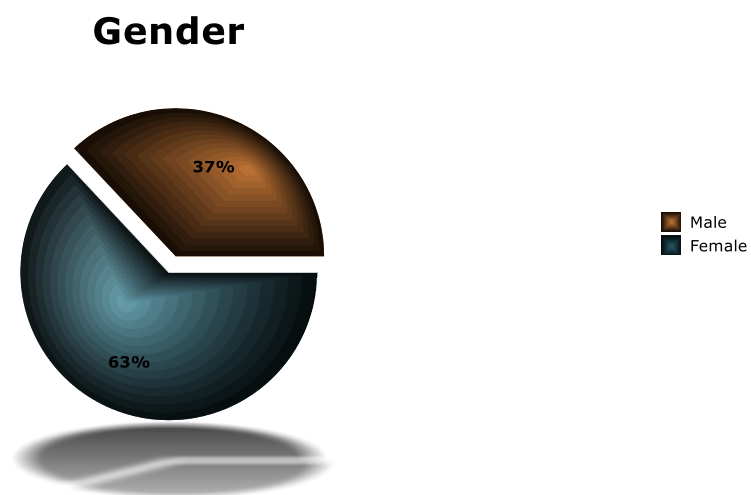


Figure 4.3 gives a visual presentation of the gender of respondents. Results from figure 4.3 shows that the bulk of the respondents (63.4%, n=64) are female subjects, while male subjects comprised 36.4% of the respondents (n=37).

#### 4.3.4 Household size

Figure 4.4: Household size distribution of respondents

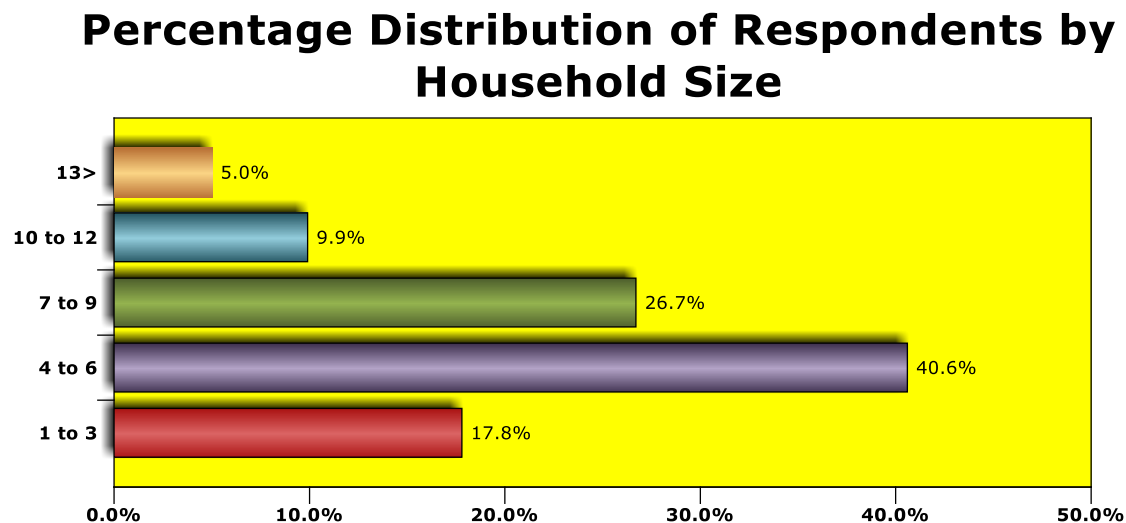


Figure 4.4 shows the distribution of respondents based on the household size. The majority of the respondents (40.6%; n=41) had 4-6 people living with them, 26.7% (n=27) had a household of 7-9 people, 17.8% (n=18) had a household of 1-3 people, 9.9% (n=10) had a household of 10-12 people while 5% (n=5) of the sample lived with 13 or more people in their household.

### 3.5 Income source

Figure 4.5: Income source distribution of respondents

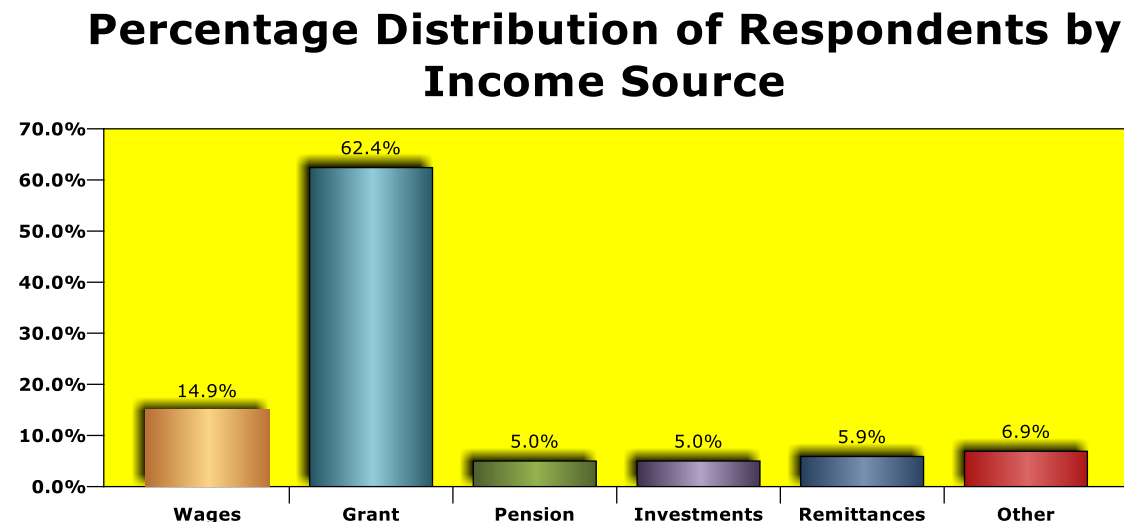


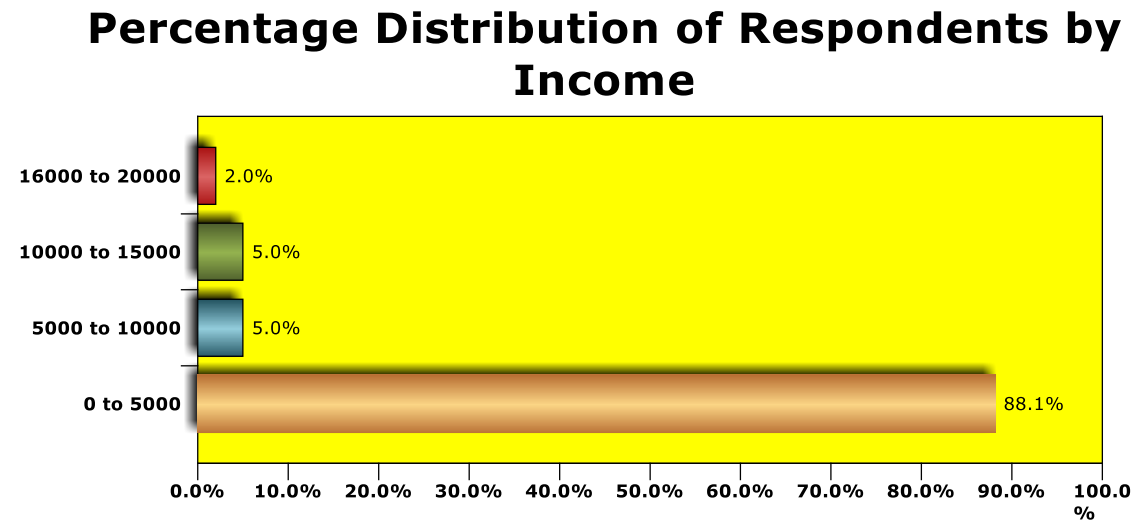
Figure 4.5 shows the respondents' sources of income. Most of the respondents (62.4%; n=63) get their incomes from grants, 14.9% (n=15) from wages, 6.9% (n=7) from other sources and 5.9% (n=6) from remittances. A 5% (n=5) of the sample get their incomes from pensions and the same number of respondents (5%, n=5) from investments.

#### 4.3.6 Household income

Figure 4.6 shows the respondents' household income. Most of the respondents' (88.1%; n=89) household income ranged from R0 to R5000. A 5% (n=5) of the sample had a household income of R5000-R10000, while the same number of respondents (n=5) had a household income of R11000-R15000. Lastly two respondents (2%) had a household income which ranged from R16000 to R20000.

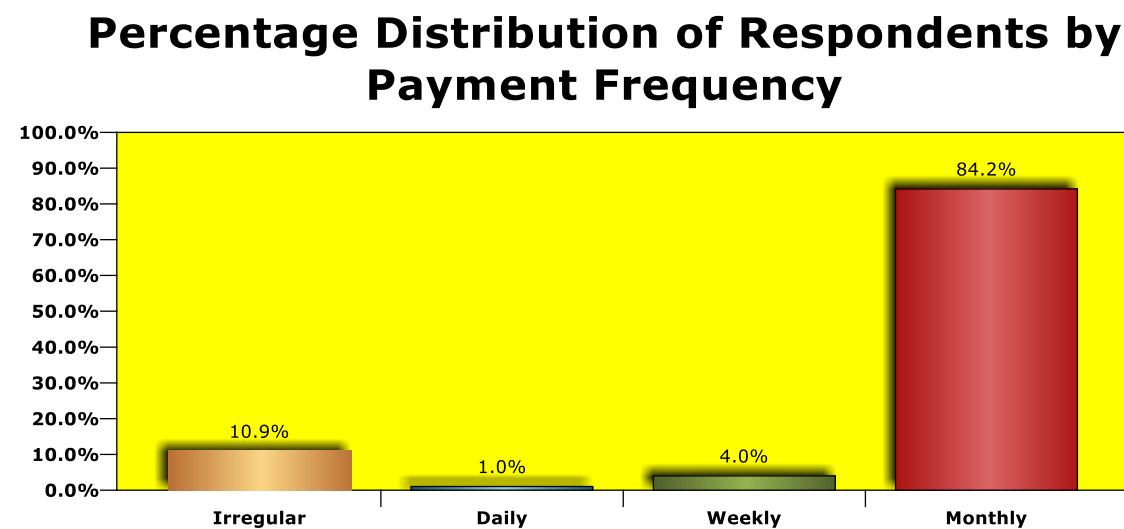


Figure 4.6: Household income distribution of respondents



#### 4.3.7 Payment frequency

Figure 4.7: Payment frequency distribution of respondents



The payment frequency distribution of respondents is depicted by Figure 4.7. The majority of the respondents (84.2%; n=85) got their payments on monthly basis, 10.9% (n=11)

irregular basis, 4% (n=4) fortnightly and lastly only one respondent (1%) got payment on a daily basis.

#### 4.3.8 Employment status

Figure 4.8: Employment status distribution of respondents

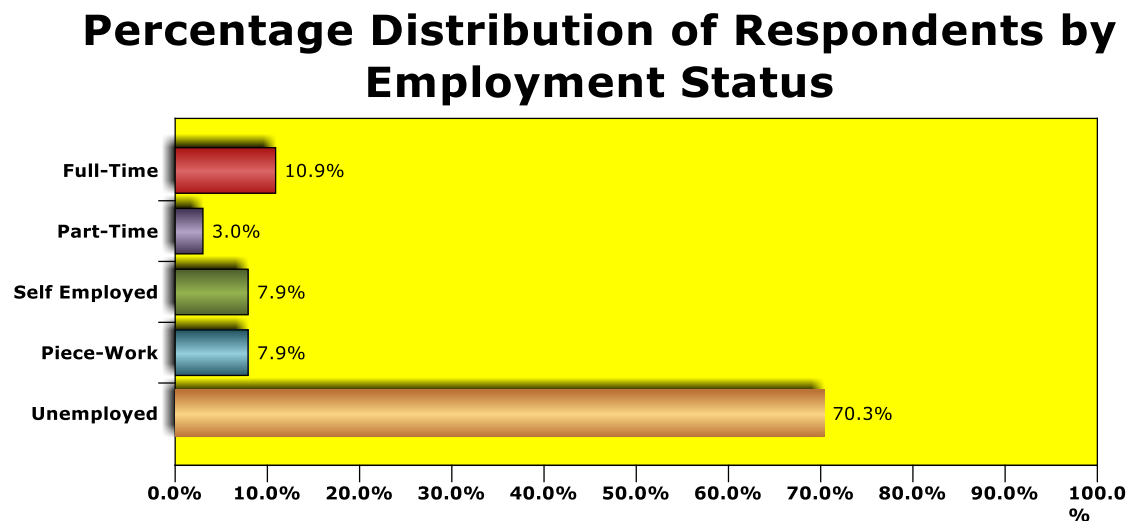


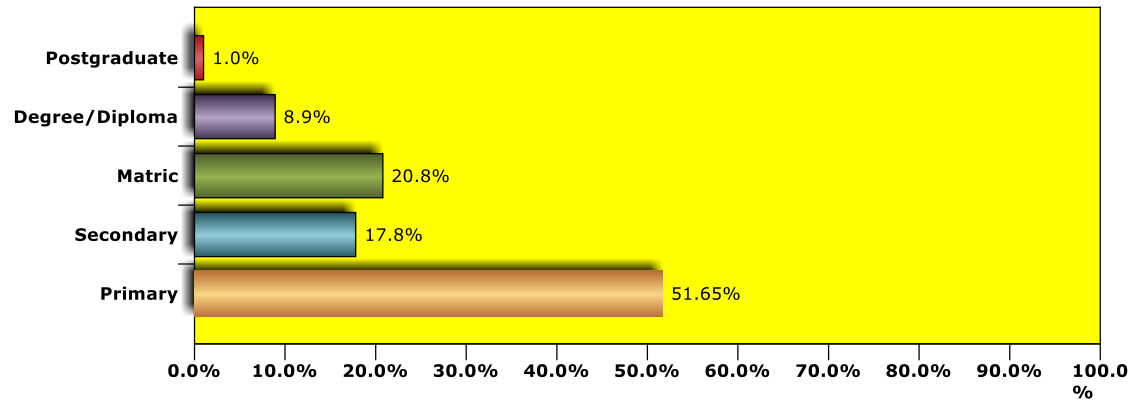
Figure 4.8 shows the distribution of respondents in terms of their employment status. The majority of the respondents (70.3%; n=71) were unemployed while 10.9 % (n=11) of the respondents were employed full time. Respondents who were self-employed and those who had worked on piece work all have 7.9% (n=8) of the total number of respondents. Lastly a further 3% (n=3) of the respondents worked on part time jobs.

#### 4.3.9 Education qualifications

Figure 4.9 illustrates the education level of the sample. The graph depicts that the majority of the respondents, 51.5% (n =52) has a primary education, whilst 20.8% (n=21) possess a matric educational level. Eighteen respondents (17.8%) have a secondary education level and nine respondents (8.9%) have a degree/diploma. Only one respondent (1%) had a postgraduate educational qualification

Figure 4.9: Education qualifications distribution of respondents

## Percentage Distribution of Respondents by Level of Education



### 4.4 Inferential statistics

#### 4.4.1 Hypothesis testing

##### *Hypothesis 1*

$H_0$ : There is no relationship between education and food security.

$H_1$ : There is a relationship between education and food security

Correlations			
		Education	Food Security
Education	Pearson Correlation	1	-.275**
	Sig. (2-tailed)		.005
	N	101	101
Food Security	Pearson Correlation	-.275**	1
	Sig. (2-tailed)	.005	
	N	101	101
**. Correlation is significant at the 0.01 level (2-tailed).			

The results show that there is a significant positive relationship between education and food security ( $r = -.275$ ;  $p = .005$ ). Therefore, the null hypothesis was rejected in favour of the alternative hypothesis. This means that as educational qualification increases the level of food insecurity decreases and vice versa.

### *Hypothesis 2*

$H_0$ : There is no relationship between income and food security.

$H_2$ : There is a relationship between income and food security.

Correlations			
		Income	Food Security
Income	Pearson Correlation	1	-.340**
	Sig. (2-tailed)		.001
	N	101	101
Food Security	Pearson Correlation	-.340**	1
	Sig. (2-tailed)	.001	
	N	101	101
**. Correlation is significant at the 0.01 level (2-tailed).			

The results show that there is a significant negative relationship between income and food security ( $r = -.340$ ;  $p = .001$ ). Therefore, the null hypothesis was rejected in favour of the alternative hypothesis. This means that as income level increases the level of food insecurity decreases and vice versa.

### Hypothesis 3

H<sub>0</sub>: Income does not mediate the relationship between education and food security

H<sub>3</sub>: Income mediates the relationship between education and food security

To determine if income mediates the relationship between education and food security, income and education were modelled as explanatory variables together with their interaction effect on food security using multiple linear regression models. The resulting F-value (F=5.029; df=3; Pr>F=0.003) show that the model was significant. A total of 10.8% of the variation in food security is explained by the model. The output is presented in Table 4.1.

**Table 4.1: Multiple Regression Model for Income, Education and Food Security**

**Table 4.1(a): Significance of Model**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.398	3	1.133	5.029	.003 <sup>b</sup>
	Residual	21.849	97	.225		
	Total	25.248	100			

a. Dependent Variable: Food\_Security

b. Predictors: (Constant), Interaction\_Effect, Education, Income

**Table 4.1(b): Variation Explained by Explanatory Variables**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.367 <sup>a</sup>	.135	.108	.47461

a. Predictors: (Constant), Interaction\_Effect, Education, Income

**Table 4.1(c): Parameter Estimates****Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.345	.526		6.361	.000
Income	-.665	.506	-.822	-1.315	.192
Education	-.189	.152	-.407	-1.243	.217
Interaction Effect	.122	.135	.744	.899	.371

a. Dependent Variable: Food Security

The overall  $F$  statistic for the moderated model is significant ( $\text{Pr} > F = 0.003$ ). The model fits, with an  $R^2$  of 0.108. The parameter estimates output showed that the interaction effect ( $\beta_3 = 0.744$ ;  $t = 0.899$ ;  $p = 0.371$ ) is not significant. Thus, there is sufficient evidence at 5% significance level to fail to reject the null hypothesis and conclude that income does not mediate the relationship between education and food security.

#### *Hypothesis 4*

$H_0$ : There is no relationship between education and standard of living.

$H_4$ : There is a relationship between education and standard of living.

### Correlations

		Living Standard	Education
Living Standard	Pearson Correlation	1	.524**
	Sig. (2-tailed)		.000
	N	101	101
Education	Pearson Correlation	.524**	1
	Sig. (2-tailed)	.000	
	N	101	101

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

The results shows that there is a significant positive relationship between living standard and education ( $r=.524$ ;  $p<.000$ ). Therefore, the null hypothesis was rejected in favour of the alternative hypothesis. This means that as standard living increase, educational level also increase and vice versa.

### *Hypothesis 5*

$H_0$ : There is no relationship between income and standard of living.

$H_5$ : There is a relationship between income and standard of living.

### Correlations

		Income	Living Standard
Income	Pearson Correlation	1	.462**
	Sig. (2-tailed)		.000
	N	101	101
Living Standard	Pearson Correlation	.462**	1
	Sig. (2-tailed)	.000	
	N	101	101

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

The results shows that there is a significant positive relationship between income and living standards ( $r=.462$ ;  $p<.000$ ). Therefore, the null hypothesis was rejected in favour of the alternative hypothesis. This means that as income level increase the living standards of an individual also increase.

### *Hypothesis 6*

$H_0$ : Income does not mediate the relationship between education and standard of living.

$H_6$ : Income mediates the relationship between education and standard of living.

To determine if income mediates the relationship between education and standard of living, income and education were modelled as explanatory variables together with their interaction effect on standard of living using multiple linear regression models. The resulting F-value ( $F=15.554$ ;  $df=3$ ;  $Pr>F<.0001$ ) show that the model was significant. A



total of 30.4% of the variation in standard of living is explained by the model. The output is presented in Table 4.2.

**Table 4.2: Multiple Regression Model for Income, Education and Standard of Living**

**Table 4.2(a): Significance of Model**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	137.313	3	45.771	15.554	.000 <sup>b</sup>
	Residual	285.440	97	2.943		
	Total	422.752	100			

a. Dependent Variable: Living\_Standard

b. Predictors: (Constant), Interaction\_Effect, Education, Income

**Table 4.2(b): Variation Explained by Explanatory Variables**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.570 <sup>a</sup>	.325	.304	1.71542

a. Predictors: (Constant), Interaction\_Effect, Education, Income

**Table 4.2(c): Parameter Estimates****Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.023	1.901		1.590	.115
Income	-.599	1.827	-.181	-.328	.744
Education	.322	.550	.170	.586	.559
Interaction_Effect	.391	.489	.586	.801	.425

a. Dependent Variable: Living\_Standard

The parameter estimates output showed that the interaction effect ( $\beta_3=0.586$ ;  $t=0.801$ ;  $p=0.425$ ) is not significant. Thus, there is sufficient evidence at 5% significance level to fail to reject the null hypothesis and conclude that income does not mediate the relationship between education and standard of living.

## Conclusion

This chapter focused on the analysis of collected data which was personally analysed by the researcher and with the help obtained from the statistician. The empirical inferential statistics used in this study was obtained through the use of the SPSS package. The Cronbach's alpha coefficients for the questions measuring the study variables were counted and were found internally consistent, showing the reliability and validity of the scale used in the study. The empirical results obtained from the analysis showed direct relationship between the study variables. The results were then compared to the hypothesis and showed a significant relationship which led to the acceptance of the alternative hypothesis and rejecting the null hypothesis.

## **Chapter 5: Discussions, Conclusions and Recommendations**

### **5.1 Introduction**

The preceding chapter focused on the analysis of data which was collected from the field and the discussion of the results from descriptive and inferential statistical analysis. The current chapter focuses on the discussion of results, limitations, conclusions and recommendations also gives a direction to future research in related studies.

### **5.2 Discussion of the results**

This section focuses on the discussion of the results in relation to the hypotheses and previous research findings. The present study sought to examine the role of education, income and standard of living in determining food security amongst Mhlontlo local municipality residents in the Eastern Cape.

Hypothesis one: Correlation between education and food security

$H_0$ : There is no relationship between education and food security.

$H_1$ : There is a relationship between education and food security

As shown in Table 4.4.1, the results shows that “there is a significant negative relationship between education and food security” ( $r=-.275$ ;  $p=.005$ ). Therefore, the null hypothesis was rejected in favour of the alternative hypothesis. This means that as educational qualification increases the level of food insecurity decreases and vice versa. This was supported by the research conducted by Alderson and Nielsen, (2002); Barro and Lee, (2000); Bourguignon & Morrisson, (2002); Nielsen & Alderson, (1995); Papanek and Kyn, (1986) showed that higher levels of education which is secondary education, once attained reduces income inequality thus making them to be food secure because of the

higher income they obtain. The results were also supported by FAO report (2013 p.22-24) which explained that “lack of education weakens employability, productivity and earning capacity, leading to hunger and poverty also the study conducted by Akire (2005) reported that educated people are likely to find jobs, they always have valuable objectives like having access to enough food for their households. Sen (1999) added that education is the ability of the poor rural people to escape from hunger and poverty (Sen, 1999).

Hypothesis two: Correlation between income and food security

H<sub>0</sub>: There is no relationship between income and food security.

H<sub>2</sub>: There is a relationship between income and food security.

The results showed that there is a significant negative relationship between income and food security ( $r=-.340$ ;  $p=.001$ ). Therefore, the null hypothesis was rejected in favor of the alternative hypothesis. This means that as income level increases the level of food insecurity decreases and vice versa. The results were supported by Crush, Frayene, Miriam and Grant (2006) who argued that households with low incomes are likely to experience hunger as compared to households with higher income. The results also show that people with full time employment, well-educated and who rely on salaries and wages are food secured as compared to those who are unemployed and uneducated who rely on government social grants as their main source of income.

Hypothesis three: Correlation between income, education and food security

H<sub>0</sub>: Income does not mediate the relationship between education and food security

H<sub>3</sub>: Income mediates the relationship between education and food security

To determine if income mediates the relationship between education and food security, income and education were modelled as explanatory variables together with their interaction effect on food security using multiple linear regression models. The resulting F-value ( $F=5.029$ ;  $df=3$ ;  $Pr>F=0.003$ ) show that the model was significant. A total of 10.8% of the variation in food security is explained by the model. The overall  $F$  statistic for the moderated model is significant ( $Pr > F=0.003$ ). The model fits, with an  $R^2$  of 0.108. The parameter estimates output showed that the interaction effect ( $\beta_3=0.744$ ;  $t=0.899$ ;  $p=0.371$ ) is not significant. Thus, there is sufficient evidence at 5% significance level to fail to reject the null hypothesis and conclude that income does not mediate the relationship between education and food security.

Hypothesis four: Correlation between education and standard of living

$H_0$ : There is no relationship between education and standard of living.

$H_4$ : There is a relationship between education and standard of living.

The study shows that there is a significant positive relationship between living standard and education ( $r=.524$ ;  $p<.000$ ). Therefore, the null hypothesis was rejected in favour of the alternative hypothesis. This means that as standard living increase, educational level also increases and vice versa. The results were supported by Robustequ (2012) who argued that highly educated individuals generally have a higher standard of living. He further stated that Better education leads to a better standard of living, it helps an individual to obtain capacity to engage in the labour force, therefore better income to sustain household food security.

Hypothesis five: Correlation between income and standard of living

H<sub>0</sub>: There is no relationship between income and standard of living.

H<sub>5</sub>: There is a relationship between income and standard of living.

The results showed that there is a significant positive relationship between income and living standards ( $r = -.462$ ;  $p < .000$ ). Therefore, the null hypothesis was rejected in favour of the alternative hypothesis. This means that as income level increase the living standards of an individual also increase.

Hypothesis six: Correlation between income, education and standard of living

H<sub>0</sub>: Income does not mediate the relationship between education and standard of living.

H<sub>6</sub>: Income mediates the relationship between education and standard of living.

As shown in the model income mediates the relationship between education and standard of living. The resulting F-value ( $F = 15.554$ ;  $df = 3$ ;  $Pr > F < .0001$ ) show that the model was significant. The research hypothesis (H<sub>6</sub>) is accepted. This result is in line with previous research by Kuznets (2002) identified education as the primary determinant of income inequality, which implies that uneducated individuals are struggling to find jobs and yet they get temporary jobs with low pay, which makes them unable to afford safe and nutritious food and other amenities which leads to low living standards.

### **5.3 Limitations and future research direction**

The study focused on the role of education, income and standard of living in determining food security amongst Mhlontlo local municipality citizens, Eastern Cape. The researcher encountered some challenges when collecting data hence it is important to mention some of those limitations. Participants were sometimes reluctant to disclose some of their information since individual's income is regarded as personal. This has resulted to some of the respondents refusing to expose their income range.

In this study, only questionnaires were employed as data collection instruments. It is expected that respondents required explanation in some cases where they do not understand. Respondents can sometimes provide false answers to impress the researcher for social desirability. Questionnaires generate inadequate information because it limits the amount of information to be collected. Sometimes are biased. Through the use of questionnaires, the respondents are only expected to answer only the asked questions sometimes there are no open-ended questions to add comments and express their views. The questions and responses are only limited to the area of study which can limit the generalization of the findings. Therefore, the results are not generalizable to all the rural areas in South Africa but only for Mhlontlo.

In conducting the present study, a number of limitations were encountered. The study only focused on income, level of education, standard of living and food security as the study variables. The choice of the research problem and objectives were based on the researcher's determination to contribute towards addressing the widespread problem of food insecurity affecting so many people. This choice of study variables was at the

expense of other variables that could have been included in the research. Furthermore, the study was conducted only in Mhlontlo Municipality in the Eastern Cape Province.

The study was dependent mostly on the data obtained from participants who may have been reluctant to provide their monthly salary thinking that their sources of income will be exposed. False information may have been acquired since the participants did not want to reveal exactly the amounts of their respective salaries. To such sensitive questions like age and monthly income, some participants may choose not to respond at all. In order to encourage participants to answer truthfully, field workers assured the participants that their responses will be kept strictly confidential.

#### **5.4 Recommendations**

To reduce spending on rising food prices, rural households must take advantage of the widely available home gardens growing fruits and vegetables (e.g., spinach, cabbage and peaches) used as relish in meals to larger land plots growing staple foods (e.g., maize and wheat). The use of home gardens can increase the consumption of vegetables and improves diets. Home gardens are as well the way of saving money and increases access to nutritious food, people obtain new skills, provides physical activity it also improves relations between citizens and local government.

Local government can increase local food production by providing flexibility on the requirements of Food Act to allow production and sales of products from fruit farms such as juices and Jams. Local food production can create job opportunities for both illiterate and literate people, it can also open opportunities for people to start their own businesses such as to sell fruits to generate more income to maintain their standard of living. This



means that the dependency on social grants can decrease if government can provide assistance to households on maintaining the home gardens effectively.

Government can as well invest on home gardens as it can be the long-term solution to increase food security rather than feeding schemes and social welfare programs. This can help people to have access to healthy and nutritious food at all times. Government provided programmes such as Lima and poultry special programmes but they lack monitoring, thus people should be educated and trained on these programmes to help alleviate the issue of food insecurity.

To further increase the amount of available disposable income for non-food expenses, rural communities can lobby (possibly through participative decision-making as encouraged in public service-related legislation) their respective local and provincial governments to invest in infrastructural development. Such infrastructure as tarmac roads and business offices, among others, can attract external investors who will help create employment in facilitating local economic growth. In furthering growth of local rural economies, municipalities, in collaboration with other stakeholders in the private and public sectors, can initiate and support income-generating activities that enable rural community members of economically-active age to advance and utilize their knowledge, skills and abilities in contributing to the local economic development as recommended in national legislature.

It has been recommended that the state should take measures to regulate food prices. While some see this to free up more disposable income for rural households, most of whom already spend the majority of their incomes on food alone, others believe that the

supply-and-demand dynamics of a free-market or mixed economy should regulate prices, even in a country like South Africa experiencing widespread poverty and among the highest income-inequality gaps in the world (Jacobs, 2009). The impact of such policy and supply-and-demand dynamics on rural household's food security, while varying from one community to another, has been manifest to multitudes of households. However, as long as the extensive food insecurity at the household level have persisted in the country, it is clear that such measures, on their own, are insufficient to address the food-security dilemma. A manifold remedy is therefore required.

### **5.5 Conclusion relating to this chapter**

The current chapter provided the discussion of the results of study also mentioned the limitations encountered also recommendations for future research was discussed as well. Recommendations on how household hunger can be reduced, how people can be encouraged to go to school and be able to get jobs was also given to government.

### **5.6 Conclusions relating to the entire study**

The chi-square results added more level to support to the relationship amongst variables found in the literature. The alternative hypothesis in the study was accepted in favour of the null hypotheses. Below are summarized conclusions of the study:

- Income does have impact on household hunger this shows that the more the income in a household, the more food to secure the household, the higher the affordability. Households with low income experience hunger because they lack means to acquire much food for the whole family.
- Education does have impact on household hunger. This shows that individuals with higher education are likely to have a job and income to buy more food and

secure the family. Individuals with low level of education rely on social grants and temporal jobs. This results in household hunger because they do not have money to buy enough food.

- Income mediates the relationship between education and food security. This shows that the more a household member is educated the higher are the chances of acquiring employment and get income to buy enough food for the whole household. There is a positive relationship amongst the three variables.
- Income does have impact on standard living. This implies that households with higher income have high standard of living. Households with low income have low standard of living.
- Education does have impact on standard of living. This shows individuals with high level of education have high standard of living, they have cars big houses and more.
- Income mediates the relationship between education and standard of living

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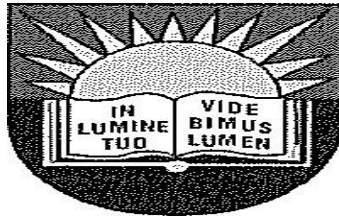
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## Appendix 1



University of Fort Hare  
Together in Excellence

### ETHICAL CLEARANCE CERTIFICATE

REC070710-028-RA Level 01

Certificate Reference Number: DYW061 SHALOI

Project title: Exploring the role of education, income and standard of living in determining food security among Mhlontlo Local Municipality citizens in the Eastern Cape.

Nature of Project: Masters

Principal Researcher: Khanyiswa Halam

Supervisor: Mr M. Dywili

Co-supervisor: N/A

On behalf of the University of Fort Hare's Research Ethics Committee (UREC) I hereby give ethical approval in respect of the undertakings contained in the abovementioned project and research instrument(s). Should any other instruments be used, these require separate authorization. The Researcher may therefore commence with the research as from the date of this certificate, using the reference number indicated above.

Please note that the UREC must be informed immediately of

- Any material change in the conditions or undertakings mentioned in the document
- Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research

The Principal Researcher must report to the UREC in the prescribed format, where applicable, annually, and at the end of the project, in respect of ethical compliance.

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Special conditions: Research that includes children as per the official regulations of the act must take the following into account:


Note: The UREC is aware of the provisions of s71 of the National Health Act 61 of 2003 and that matters pertaining to obtaining the Minister's consent are under discussion and remain unresolved. Nonetheless, as was decided at a meeting between the National Health Research Ethics Committee and stakeholders on 6 June 2013, university ethics committees may continue to grant ethical clearance for research involving children without the Minister's consent, provided that the prescripts of the previous rules have been met. This certificate is granted in terms of this agreement.

The UREC retains the right to

- Withdraw or amend this Ethical Clearance Certificate if
  - o Any unethical principal or practices are revealed or suspected
  - o Relevant information has been withheld or misrepresented
  - o Regulatory changes of whatsoever nature so require
  - o The conditions contained in the Certificate have not been adhered to
- Request access to any information or data at any time during the course or after completion of the project.
- In addition to the need to comply with the highest level of ethical conduct principle investigators must report back annually as an evaluation and monitoring mechanism on the progress being made by the research. Such a report must be sent to the Dean of Research's office

The Ethics Committee wished you well in your research.

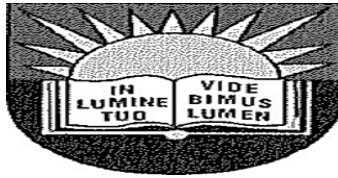
Yours sincerely



Professor Gideon de Wet  
Dean of Research

29 June 2016

## Appendix 2



University of Fort Hare  
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### Research Questionnaire

My name is Khanyiswa Haram. I am a student in the Department of Industrial Psychology, Faculty of Management and Commerce, at the University of Fort Hare. I am conducting a research on exploring the role of education, income in determining food security amongst Mhlontlo local municipality citizens in the Eastern Cape. The research is done as part of the Master's degree requirements in Industrial Psychology and strictly for academic purposes only. The information collected will be kept confidential. You are requested to complete the questions that follow.

QUESTIONNAIRE									
SECTION A: BIOGRAPHICAL INFORMATION									
Please mark with and X in the box next to the most appropriate option. Where necessary, please write your response in numbers or words.									
Home language	isiXhosa			English			Other (please specify)		
Age	18-29			30-39			40-49		
Gender	Male						Female		
Household size									
Number of adults									
Number of adolescents									
Number of children									
Grant recipients									
Grant for older persons									
Disability grant									
War veterans' grant									

<b>Child grant: foster child grant</b>										
<b>Care dependency grant</b>										
<b>Child support grant</b>										
<b>Grant-in-aid</b>										
<b>Household income</b>										
<b>Payment frequency</b>	Irregular		Daily		Weekly		Fortnightly		Monthly	
<b>Employment status of main breadwinner</b>	Unemployed		Piece-work		Self-employed		Part-time		Full-time employment	
<b>Highest education level</b>	Primary		Secondary		Matric		Degree/diploma		Post-graduate	
<b>SECTION B: LIVING STANDARDS MEASURE</b>										
<b>Please indicate if you own any of the following household items by putting a tick in the appropriate boxes.</b>										
<b>1. I have the following in my household:</b>								<b>Tick</b>		
.TV set										
.Swimming pool										
.DVD player/Blu-ray player										
.Pay TV (M-Net/DSTV/Top TV) subscription										
.Air conditioner (excluding fans)										
.Computer/desktop/laptop										
.Vacuum cleaner/floor polisher										
.Dishwashing machine										
.Washing machine										
.Tumble dryer										
.Home telephone (excluding cellphone)										
.Deep freezer - free standing										
.Refrigerator or combined fridge/freezer										
.Electric stove										
.Microwave oven										
.Built-in kitchen sink										
.Home security service										
.3 or more cell phones in household										
.2 cellphones in household										
.Home theatre system										
<b>2. I have the following amenities in my home or plot:</b>										
.Tap water in house/on plot										
.Hot running water from a geyser										
.Flush toilet in/outside house										
<b>3. There is a motor vehicle in our household</b>										
<b>4. I am a metropolitan dweller</b>										
<b>5. I live in a house, cluster or town house</b>										
<b>6. I live outside town</b>										

<b>7. There are no radios, or only one radio (excluding car radios) in my household</b>	
<b>8. There is no domestic workers or household helpers in household (incl. both live-in &amp; part time domestics and gardeners)</b>	
<b>SECTION C: HHS MODULE</b>	
<b>Please indicate your answers to the questions below by writing the appropriate numbers in the boxes to the right.</b>	
<b>Q1. In the past [4 weeks/30 days], was there ever no food to eat of any kind in your house because of lack of resources to get food? (0 = skip, 1 = go to 1a)</b>	
<b>Q1a. How often did this happen in the past [4 weeks/30 days]? (1 = Rarely (1-2 times) 2 = Sometimes (3-10 times) 3 = Often (more than 10 times))</b>	
<b>Q2. In the past [4 weeks/30 days], did you or any household member go to sleep at night hungry because there was not enough food? (0 = skip, 1 = go to 2a)</b>	
<b>Q2a. How often did this happen in the past [4 weeks/30 days]? (1 = Rarely (1-2 times) 2 = Sometimes (3-10 times) 3 = often ( more than 10 times))</b>	
<b>Q3. In the past [4 weeks/ 30 days], did you or any household member go a whole day and night without eating anything at all because there was not enough food? (0 = skip, 1 = 3a)</b>	
<b>Q3a. How often did this happen in the past [4 weeks/30 days]? (1 = Rarely (1-2 times) 2 = Sometimes (3-10 times) 3 = Often ( more than 10 times))</b>	

Thank you for your co-operation.