

**Strathmore**  
**UNIVERSITY**

**INFORMAL EMPLOYMENT IN POVERTY REDUCTION IN KENYA**

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**101787**

**Submitted in partial fulfilment of the requirements for the Degree of  
Bachelor of Business Science-Financial Economics at Strathmore University.**

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**Nairobi, Kenya**

**October 2020**

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11<sup>th</sup> February 2021

This Research Project has been submitted for examination with my approval as the Supervisor.  
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11<sup>th</sup> February 2021

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## 1. INTRODUCTION

### 1.1. BACKGROUND INFORMATION

The most widely held definition of poverty economically is the situation of an individual earning less than \$1.90 a day. The World Bank improves this definition and extends it beyond monetary definitions to include standards of living and basic needs. According to the Britannica Encyclopaedia, poverty has also been associated to high levels of disorderly behaviour, improvidence, and inability to work. Overtime, the definition of poverty has continually been built up to include other metrics. Despite poverty being a worldwide issue, there is no general cause for it (Vale, 2018). There are varied causes of poverty that are country-specific and period-specific.

The World Poverty Clock report in 2018 ranked Kenya eighth globally as having the largest population living in extreme poverty. In Africa, Kenya was sixth with a poverty escape rate of about 0.5 people per minute. There has however been a significant drop in the number of people living in poverty which can be attributed to the economic development and expansion in the country (Kenya National Bureau of Statistics). Despite the drop, the number is still disheartening and there is need for a correction strategy to reduce these high numbers.

The Kenyan Vision 2030 is being swayed and challenged with the levels of poverty in the country. In another report by Afrobarometer, the country's LPI (Lived poverty Index) has been rising from approximately 0.93 to 1.06 in the years 2014 to 2018. Severe lived poverty was also mentioned as having experienced an upswing of about 3% from 8.4% in 2014 to 11% in 2018 (Afrobarometer, 2020). Unemployment amongst other causes of poverty in the country, has been highlighted as being a key determinant of the high levels. The World Bank ranked the country as having the highest rate of youth joblessness in East Africa in 2015. A publication by Business Daily Africa also highlighted that more than a third of Kenya's youth are unemployed (NDEGE, 2018).

There exists speculations and fear of Kenya not achieving its goal of eradicating poverty by 2030 with its current poverty reduction pace. (Pape, 2018), a leading economist in the World Bank, noted that poverty reduction in the country will need more inclusive growth rates together with better developed and focused poverty reduction policies.

A report done in Kenya 'Sauti za Wananchi' in 2018 released by the Twaweza East Africa Publication recognized the increasing gap between the rich and the poor in the country (Sauti Za Wananchi, 2018). According to the report, approximately 48% of Kenyans identified unemployment as a major cause for poverty in Kenya. This was together with social injustice and the lack of education. The Kenya Economic Survey done in 2019 identified a decline in the number of jobs created between the years 2017-2019. Approximately 840,000 jobs were created in 2019 as compared to the 910,000 jobs created in 2017. The latest World Bank report mentioned the need for Kenya to create 900,000 jobs annually in order to absorb the rising number of Kenyan youths joining the market. The report highlighted about nine million Kenyans were expected to enter the labour market by 2025. This would increase the unemployment rate in Kenya which was at 9.31% in 2019.

The increasing levels of poverty in the country coupled with unemployment as a key factor acts a key motivation for this study in understanding the situation as well as the necessary policies required to be implemented to address these issues. This further broadens our study to the informal employment in the country. Why the informal employment? In Kenya, about 80% of the working population is under the informal economy. According to the Kenya National Bureau of Statistics, in 2015, the informal sector was made up of about 82.7% of employment. The higher percentage of workers in the informal economy is a general characteristic in LMIC (low and middle-income countries). The term "Informal Sector" was first introduced by Keith Hart in 1971 to describe a section of the economy that operates outside the formal labour market. However, Keith associated the informal sector with the self-employed individuals. This concept has however had improvements over time.

In the world, more than 60% are employed in the informal sector. The informal sector is usually associated with self-employment (Hart, 1973). In most developing countries, self-employment takes up a higher percentage in informal economy than wage employment. Self-employment represents about 70% of the informal sector in the Sub-Saharan Africa as compared to informal wage employment which takes up about 30% of informal economy globally. In Kenya, the informal economy was first identified by the International Labour Organization (ILO) as they conducted a study which proved that there existed an economy with a huge number of small business. The Government of Kenya refers to the informal sector as semi-organized and unregulated small businesses that have not been licensed by local authorities and not registered as well. However, these small-scale activities are continuously being recognised as an important part of the economy.

In a report by the World Bank, employment in the informal sector is being recognized as being associated to lower levels of poverty. In 2015, the world bank conducted an economic survey and their findings included an increase of about 799,000 new job creation and in which 700,000 were under the informal sector. Compared to the small-scale agriculture that also constitutes a high working percentage, the informal sector is seen to be associated with lower poverty levels when compared to farming. Due to this dynamic nature of the informal sector in the country, there has been continuous focus to tap into the sector and develop as well as train individuals working in the sector.

With regards to the information above, several researchers have explored this field in trying to understand the poverty situations in their respective countries as well as the role of the informal sector in poverty alleviation. In a study done in Zimbabwe, (Constancia, 2014), the author identified some of the causes of informality in the country. In the report, poverty is mentioned as a key aspect in the informal economy with poverty rates being estimated to be higher in those under informal employment. In another study done in Albania, (Kume, Enida, 2016), on the relationship between informality and poverty, poverty and informality are seen to be correlated and persistent at an individual level. (Hieu, 2013) conducted a study in Vietnam to examine whether informality accelerates or decelerates poverty. The author used a probit model as well as a quantile analysis regression in analysing his data. The results of the analysis prove that informal earnings help mitigate poverty at a significant level.

In another study in Russia, (Timofeyev, 2012), concluded that the informal sector in the country does reduce poverty but the impact is too small to be regarded as significant in poverty alleviation. In this paper, the author calculates the labour income of the poor in the informal sector and follows a qualitative comparative approach in comparing that to the wages in the formal sector. In Kenya however, there exists no study that seeks to understand the relationship between informal employment and poverty reduction. Several studies with regards to poverty alleviation however exist but with different approaches and focus as to the sectors involved. (Thurlow, 2007) for example, focused on rural investments in accelerating growth and poverty reduction. In another study done by (Okibo, 2014), microfinance institutions are being recognized as a key strategy in poverty alleviation while (Mutongu, 2018) in his paper investigates women's participation in community-based organizations as a strategy for poverty reduction.

### 1.1.1 THE INFORMAL SECTOR IN KENYA

The informal sector constitutes a major part of the total employment in the world. The International Labour Organization (ILO) for example, highlights that more than 60% of the world's employed individuals earn their living from the informal economy. Agriculture makes up the higher percentage of informal employment. However, after excluding agriculture, more than half of the remaining working population, which adds up to around two billion people, are in the informal economy. The Low- and Middle-Income Countries (LMIC) represent the above statistics at a higher level. Emerging and developing countries are seen to have a higher working population in the informal sector with about 93% in the informal employment.

In Kenya, the informal sector consists of a higher percentage of the total working population. In a report done by the Kenya National Bureau of Statistics, informal employment made up to 83.6% of the total employment in 2018. According to the World Bank, employment in the informal sector in the country can be attributed to lower levels of poverty as compared to other sectors such as farming. The informal sector in Kenya is mostly made up of more men than women. A greater proportion of the informal employment in the country is found in trade, hotels, and restaurant businesses.

Most of the industries in the country's informal sector are found in the rural areas. This makes up about 71% of the total enterprises. The most dominant industry in the sector is trade and manufacturing with about 64% of the total enterprises. This can be attributed to the ease of entry and the liberalized market in the trade sector (Republic of Kenya, 2003). Male-owned enterprises are more than the female-owned ones in the rural areas with the reverse being true in the urban areas. However, in general, male participation in the sector is higher than the female with male owned enterprises consisting of about 50.6%.

The informal sector is regarded to hold the key for the world's poor needs for an inclusive and robust economic growth (Soto, 1989). In Kenya, the large size of the informal sector is seen as the main driver of low levels of unemployment. However, despite the low levels of unemployment due to the boom of the informal sector, the characteristics of this economy still hinder poverty reduction strategies. How so? With minimum wages, extreme working conditions, little to no job security and also no benefits, poverty in the informal economy remains to be a problem. With regards to this, the ILO came up with a project that seeks an

integrated approach towards poverty alleviation through the informal sector. The targeted group of the project entitled 'Informal Economy, Poverty and Employment', were the vulnerable and the poor working in the informal sector. The poverty reduction strategy involved improving and providing decent job opportunities for the working population in the sector. There have been other developments within the informal sector in the country.

One of the development plans within the informal sector in Kenya is highlighted in The Sessional Paper No. 2 of 1992 on 'Small enterprise and Jua Kali development in Kenya'. This is one of the major ways in which the government has shown effort in creating suitable conditions for those working in the informal sector. Jua Kali is the name given to Kenya's informal sector which includes workshops involving handicrafts, furniture etc. Another important way through which the informal sector is being tapped into is in the introduction of the voucher program for training individuals in the Jua Kali. The program 'Micro and Small Enterprise Training and Technology Project (MSETTP) was among the initiatives to fund the trainings in the informal sector. The world bank together with the Kenyan government collaborated to help increase access to market information, provide skills as well as improve the working conditions.

The informal sector has consequently been identified as a strategy for reducing poverty in the country. According to the World Bank, given that there is a huge population working under the informal sector and that this population is mostly composed of low-income workers, increasing labour productivity in the sector can be a crucial strategy for reducing poverty and income inequality. This might be a way of improving the living conditions of the poor in the society and a way of reducing extreme poverty. The Kenyan government has also made a concerted effort to encourage participation into self-employment as opposed to paid or wage employment. This is a way of reducing the number of unemployed Kenyans by creation job opportunities and employment for the non-working population.

#### 1.1.2 POVERTY ERADICATION PROGRAMMES AND POLICIES IN KENYA

Eradicating poverty is recognized as the first of the world's Sustainable Development Goals. In addition to this, amongst the goals of the world bank is to end extreme poverty as close to two-thirds of the world's extreme poor are at risk of living in fragile and conflict affected situations (FCS). Poverty trends in the world keep changing. Globally, the population living under extreme poverty has seen a reduction over the years with a decrease from about 35% in

the 90's to less than 10% in 2015. The Millennium Development Goals (MDG) also included eradicating extreme poverty as its first goal. This goal has since been achieved before its time, in 2012. This was attributed to the concentrated global efforts that saw this massive improvement shifting the focus, to the SDG goal of ending poverty by 2030. However, despite these improvements, regional poverty trends are quite dynamic. In the Sub-Saharan Africa for example, 56% of the population lived in extreme poverty compared to the only 6% in extreme poverty in the countries of Pacific and East Asia.

Consequently, several measures have been taken in an attempt to reduce poverty levels as well as raise people's standards of living. The most common being Poverty Reduction Strategies which have been adopted globally. The PRSP (Poverty Reduction Strategy Papers) began in 1999 as a method of implementing debt relief to the highly indebted countries. However, the PRSP's are part of bigger initiatives such as MDG's (Millennium Development Goals) which has reduction of poverty as its first goal. MDG 1 is to eradicate extreme poverty and hunger and it has the following targets; to reduce the proportion of individuals whose income is less than \$1.25 by half, to achieve full employment for the youth and women and finally to reduce the number of people suffering from hunger by half during the periods 1990-2015.

In 1986 the Sessional Paper No. 1 of 1986 on Economic Management for Renewed Growth was developed. This policy paper was developed and initiated due to the poor economic performance in the country as well as the worsening poverty situation. It was also meant to deal with the economic stagnation in the country due to the oils crisis through promoting the private sector as well as managing budget deficits. Another poverty eradication programme in the country is the Social Dimensions of Development (SDD) Program which was launched in 1994. The main goal of this policy was to cushion the poor against the adverse effects engendered by the economic reforms of the 1980s.

The Poverty Reduction Strategy Paper (PRSP,2000-2003) developed by the World Bank as well as the IMF is one of the frameworks developed for poverty alleviation. The PRSP was however preceded by an Interim PRSP which was released in 2001. The PRSP specified two main goals of poverty reduction and economic growth and outlined the priorities and measures necessary to achieve them. The document highlighted the role of the government in creating a framework that would spearhead actions for poverty alleviation.

Other plans developed by the government in the reduction of poverty include the Participatory Poverty Assessments Reports (PPAR). The PPARs were developed in the 1990s as a poverty alleviation policy framework through increasing the participation of the poor people. Other legal frameworks include The National Poverty Eradication Plan (NPEP). This was a strategy to eradicate poverty within the years 1999-2015, in rural and urban areas. NPEP's goal was to provide a national policy for actions against poverty. In 2003 however, both the PRSP and the NPEP were abandoned with the Economic Recovery Strategy (ERS) being adopted.

The Economic Recovery Strategy for Wealth and Employment Creation (ERSWEC), 2003-2007, was formulated in 2003 when the National Rainbow Coalition (NARC) Government took over the government and developed new strategies to return the country to a sustainable economic growth. The ERS was the blueprint meant to guide the Government's economic policies over the next five years. Economic Recovery Action Plan focused on economic growth and harmonized strategies with the country's poverty reduction strategies. The ERS however expired in the financial year 2007/2008. The Kenya Vision 2030 was then developed as a new long-term development blueprint with equity and poverty elimination being included as a social strategy, with the goal being to reduce the number of people living in absolute poverty.

## 1.2. PROBLEM STATEMENT

While poverty which in most cases is measured using income has a direct relationship with employment, it is unclear how informal employment in Kenya affects poverty. According to World Bank report of 2015, employment in the informal sector is being recognized as being associated to lower levels of poverty. However, this is contrary to the wider perceptions, where informal sector is usually associated with very low earnings and high levels of poverty. The African Research Institute report of 2017 indicate that the informal sector accounted for 83.6% of total working population in 2015 and has seen informal sector jobs grow at 44 percent compared to the 28 percent growth in the formal sector jobs between the years 2009-2015. In a most recent survey done by Kenya National Bureau of Statistics, the 2020 Comprehensive Poverty Report, 15.9 million out of 44.2 million Kenyans were found to be living below the poverty line, with the poverty line being at Ksh 3252 and Ksh 5995 in rural and urban areas respectively.

Several programmes have been put in place to address poverty in the country. The Kenya PRSP for instance, specified twin goals of economic growth and poverty reduction and outlines the priorities and measures necessary to achieve them. Other initiatives such as the Participatory Poverty Assessment (PPA) focused on the need to understand poverty on the perspective of the poor. The National Poverty Eradication Programme (NPEP, 1999 – 2015) provided a regulatory framework for poverty and poverty eradication that would be in line with the international development goals. In 2003 however, both the PRSP and the NPEP were abandoned with the Economic Recovery Strategy (ERS) being adopted. This Economic Recovery Action Plan focused on economic growth and harmonized strategies with the country's poverty reduction strategies. The ERS however expired in the financial year 2007/2008 and the Kenya Vision 2030 was developed as a new long-term development blueprint with equity and poverty elimination being included as a social strategy, with the goal being to reduce the number of people living in absolute poverty.

However, despite the broad and ample documentations on poverty and economic inequality in the country, having sustained poverty reduction strategies and alleviation efforts seem to remain elusive. It is against this background that this study seeks to evaluate the impact informal income has in poverty reduction, more specifically absolute poverty. The underlying premise of this study suggests that earnings from the informal economy can have an overlooked impact especially in policies for poverty alleviation. This is due to how large the sector is as compared to the formal economy. Empirical studies on poverty reduction are many but they do not focus on the impact informal economy has in absolute poverty reduction. (Thurlow, 2007) focused on rural investments in accelerating growth and poverty reduction. While Thurlow focused on the agriculture sector and its impact on economy growth and poverty reduction, this thesis will contribute to literature by focusing on a larger divide and look into the informal sector. In another study done by (Okibo, 2014), microfinance institutions are being recognized as a key strategy in poverty alleviation. (Mutongu, 2018) in his paper investigates women's participation in community-based organizations as a strategy for poverty reduction. As both of this studies take on a more qualitative and descriptive design, this report will increase the knowledge gap by taking a more empirical approach and use a regression model approach in analysing the impacts of the informal earnings on absolute poverty.

### 1.3. RESEARCH OBJECTIVES

#### **GENERAL OBJECTIVE**

To examine the role and the effect the informal sector has in poverty alleviation in the country.

#### **OTHER SPECIFIC OBJECTIVES**

1. To identify the effect the informal sector has in poverty reduction in the country.
2. To highlight areas within the informal sector the government can tap to reduce poverty in the country.

#### **RESEARCH QUESTIONS**

1. What effect does the informal sector have in poverty reduction in Kenya?
2. What are the potential areas within the informal sector the government can tap into in reducing poverty?

#### **1.4. JUSTIFICATION OF STUDY**

As regards to the objectives of this report, this thesis subsequently relates to the national priorities of economic growth and poverty alleviation. Due to the paradigm shift in Kenya's economy over the years and the increasing efforts as regards to poverty reduction, there is need for potential areas of poverty alleviation as well as new systems for improving living conditions for Kenyan workers and citizens. This thesis fills this knowledge gap by providing information to policy makers with regards to the extent as to which growth in the informal sector translates to poverty alleviation. The information provided in this study is thus useful to the government as it seeks new regulatory reforms within the informal sector with aims of reducing monetary poverty. Debates and controversies with regards to the benefits of informality are not new. This report contributes to knowledge by providing useful information that demonstrates the financial potential of informal sectors. The informal private sector is thus bound to develop from new policy developments within. In addition to this studies on poverty dynamics and poverty alleviation in the country are still on the rise. This report contributes to literature by providing information that will advance understanding of aspects within the informal sector and strategies for poverty reduction. Future academic projects can therefore be carried out as this thesis enhances dissemination of information with regards to informality and poverty. With the country being at a favourable and pole position to advance efforts in the fight against poverty, new policies and strategies are required to translate economic development into poverty alleviation.

## 2. LITERATURE REVIEW

### 2.1. INTRODUCTION

This section gives a comprehensive summary of the relevant current and past theories as well as studies that are relevant to this topic. While reviewing and evaluating the state of knowledge on this subject, theoretical as well as empirical literature will be reviewed in order to get a clear picture of the various methods, models and gaps in literature.

### 2.2. THEORETICAL LITERATURE

#### 2.2.1. THE CONCEPT OF THE INFORMAL SECTOR

The term “Informal Sector” was first introduced into academic literature by Keith Hart in 1971. He introduced the concept to describe a section of the economy that operates outside the formal labour market. The notion of the informal sector was however mainly associated with self-employment (Hart, 1973). Despite this, Hart’s introduction of the concept led to many improvements with regards to definition and the activities that were involved.

However, the International Labour Office on employment in Kenya led the first pioneering research in the sector. The informal sector was thereafter characterized by the lack of individuals to follow government regulations as well as taxation (ILO, 1972). This concept has however led to a vast body of research in various fields in fields of economics, urban studies, and planning.

As opposed to Hart’s definition of the informal sector that limited the individuals to only self-employment, (Gerry and Bromley , 1979) referred to informal sector as a way of making income outside the formal employment either as an alternative or a as a means of supplementing income already earned within it. In another definition by (Guha-Khasnobis, B.Kanbur, 2006) ,the informal sector is associated with activities that are either not regulated or insufficiently regulated by the state. With the various definitions over time, several theories with regards to the causes as well as nature of the informal sector have been identified in literature. According to Women in Informal Employment Globalizing and Organizing (WIEGO, 2012), the debate with regards to nature and composition of the informal sector have been grouped into four different schools of thought.

The four different schools of thoughts include; The dualist, the structuralist, the legalist and the voluntarist. All of the listed different aspects follow a chronological order as they structured with regards to various researchers’ ideas and suggestions over the years. The dualist is a school of thought that relates the informal sector with marginal activities that are a

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safety net for the poor in times of crisis. This includes the early works of Keith Hart (Hart, 1973), Sethuraman (S.V Sethuraman, 1976) and Tokman (E. Tokman Victor, 1978). According to the following authors, the dualist regard to the informal sector as being separated from economic opportunities due to varying population growth rates as well as difference in people's skills. The next school of thought that followed closely after this was the structuralist. Here, the informal sector is made up micro-enterprises that eventually result in reduced labour costs and inputs and an increase in competitiveness in the large capitalists' firms. Some of the authors that proposed this include Caroline Moser (Moser, 1978) and Alejandro Portes (Portes, 1989). According to the structuralists, capitalism is the driver of informality. This includes industrialization, globalization, reduction of labour costs by the formal firms, as well as state regulation (taxes and social legislation).

The third theory involves individuals in the sector who intentionally convert to informality in order to avoid costs and the efforts of formal registration and this school of thought is referred to as the legalist. The main author that proposed this was De Soto (Soto, 1989). The causal theory that gives rise to informality in this school of thought is the hostile legal system. Lastly, the voluntarist is a school of thought that involves individuals who deliberately avoid legal regulations and taxation but unlike the legalist school, they do not blame the tiresome and unpleasant registration procedures. According to the voluntarists, people choose to join the informal sector after a cost-benefits analysis of informality as compared to formality.

The different schools of thoughts that underline the informal sector can be summarized in three main theories that can be identified in literature with regards to the causes of informality. They include modernization, neo-Marxism (structuralism) and neoliberalism.

The modernization theory represents the dualism school of thought. As it was dominant through the second half of the 20<sup>th</sup> century, this theory suggested that the economy is divided into both the formal and informal economy. While the formal economy was a representation of development and advancement, the informal sector represented underdevelopment and pre-modernity. In this view, the informal sector was temporary and would eventually disappear with the modernization of states. This theory was rooted in the works of Lewis (Lewis, W.A, 1954) and Harris and Todaro, (Harris, Todaro, 1970)

The neo-Marxist theory represents the structuralist school of thought which saw the informal sector as a result of capitalist restructuring. As capitalists improve their competitiveness by

cutting labour costs, informal economies tend to thrive. Globalisation as well as industrialization are also seen as drivers of informality due to deregulation and liberalization. This is seen as an improvement of the modernization theory as informal sector are linked to the modern economy as opposed to being separated from it. This theory can be seen by different authors including (Castells M.,Portes A., 1989), (Sassen,S, 2019) , (Sahu,P.P, 2010), (Meagher,K, 2016), (Amara, 2016), (Portes, A.; Schauffler, R., 1993).

The neoliberal perspective theory is mainly concerned with the legalist as well as the voluntarist schools of thought. From this theory, neoliberalism represents the consequences of state regulation and individuals' response to them. Informality is thus seen as a result of excessive state regulation and the rationale of individuals trying to avoid tiresome processes as well as high institutional costs (Gindling T.H, 2013).

#### 2.2.2. CAUSAL THEORIES ON POVERTY

This section highlights the main causal theories of poverty as illustrated in literature and they include classical theory, neoclassical theory, Keynesian or the neoliberal theory, Marxian or the radical theory and lastly social exclusion and social capital theories.

Poverty definitions keep evolving from individuals earning less than \$1.90 a day to include other non-monetary definitions such as standards of living and basic needs. Due to the existence of the different dimensions of deprivation, poverty can be measured in various ways. According to the world bank, the poverty line which represents the line separating the poor from the non-poor, represents the minimal consumption level. As poverty generally represents the lack of necessities, these necessities may not be uniform and shared by everyone (Sen, 1999). The Sen's approach illustrates that needs may be subjective to past experiences and may be relative to what is possible. With other authors defining poverty as being relative to inequality, others have extended the definition to political terms (Michael Darby, 1997). However, the most common definition of poverty lies along the lines of monetary and statistical measures.

One of the most important contributors to poverty literature is Amartya Sen who contributed to the debate on the distinction between absolute and relative poverty. According to his approach, absolute poverty with regards to a person's capabilities extends to relative deprivation in terms of commodities, incomes and resources (Sen, 1983). Due to the variations of definitions of poverty, there exists various causal theories in literature that seek to explain this phenomenon and its causes.

The first causal theory of poverty is the classical theory. Classical economics mainly included the works of Adam Smith and David Ricardo and was developed during the 18th and 19th centuries. A major assumption of the classical theory is that outcomes of all transactions in the market are efficient and thus wages fully reflect productivity. In this regard, individuals are largely responsible for their own outcomes and thus poverty is as a consequence of poor choices. Andersen (1990) argues that this classical theory is seen to relate to laissez-faire principle that illustrates individual's responsibility for their own outcomes. In another representation by (Blank, R, 2010) , poverty begets poverty and thus deficiencies may continue overtime.

Neoclassical theory is the second theory in poverty literature. Alfred Marshall is the major contributor towards neoclassical economics (Marshall, 1890). This theory illustrates that causes for poverty are beyond individuals' control. The theory thus suggests that market failures which lead to unequal endowments of skills and capital aid in generating poverty. Externalities, information asymmetry and adverse selection within a market-based competitive economic system are viewed as aggravators of poverty (Davis E. P. , 2007). Other reasons for poverty according to the neoclassicals include lack of social resources, poor economic systems that exclude the poor from credit markets, and barriers to education.

The classical and neoclassical theories emphasize on individual behaviour and the relation between income and productivity. They thus apply the statistical measures of poverty and with that they are advantageous as policies can be readily be implemented. However, one of the main criticisms lies in the overemphasis of individual capabilities and cause for poverty whilst ignoring the community altogether. The focus on material means in poverty alleviation is also a major critic of the two theories.

Keynesian or the neoliberal theory puts emphasis on underdevelopment other than market failures as a cause for poverty. In that regard, economic growth and development is thus regarded as most effective in ending poverty. Liberal theory was first pioneered by J. M. Keynes who believed that economic development through various market forces is the most important tool against poverty. The neoclassical paradigm is similar to this theory as both take a similar stance towards poverty alleviation which is growth in income. Unlike the classical theory, unemployment is seen to be involuntary and government intervention is required. Thus, equality in income distribution as well as publicly provided capital are foundations for economic growth and thus poverty alleviation.

Marxian or the radical theory suggest economic development and growth alone may be insufficient for poverty alleviation as benefits of economic growth may not trickle down to all classes. According to this theory the market is dysfunctional (Blank, R, 2010) and that capitalism keep the cost of labour unnaturally lower than its value. Therefore, poverty in a capitalist economy can only be alleviated through strict state regulation of the market. These regulations may include minimum wage laws as well as antidiscrimination laws. Through the emphasis of the concept of class, this theory introduces a new perspective by focusing on group and communities as opposed to individual characteristics.

Lastly, social exclusion and social capital theories are another strand of literature that emphasizes the interrelation between social exclusion, social capital and the occurrence of poverty. They thus recognise the importance of the structural characteristics of society. Social exclusion is defined as more than the lack of material resources by reframing poverty as a feature of society ( (John Hills and Kitty Stewart, 2005). The concept of social capital was initially proposed by (Loury, 1977)who used the theory to explain income disparities between black and white youth in the US. As these theories contribute to economics literature by switching focus on understanding intrinsic processes that allow persistence of deprivation, they are greatly critiqued. This is because social exclusion as well as social capital are arguably the least precisely defined thus more challenging to quantify and address through policies.

### 2.3. EMPIRICAL LITERATURE

#### 2.3.1. DETERMINANTS OF POVERTY

Amongst the empirical papers done in the country include a study by (Geda, 2001) on the 'Determinants of Poverty in Kenya'. In the paper, one of the significant issues mentioned in the paper is analysing the key determinants of poverty that can be amended and are flexible to policy effects and changes. Extreme poverty is mentioned in the paper and the determinants are identified. They include size of the household, education levels and agricultural engagements. The method used in the paper is a logit model that employs both binomial and polychotomous models in examining the determinants of the poverty status at a household level. The main findings of this paper are education, household size and engagement in agriculture is strongly associated poverty status.

(Patti, 2009) , 'Understanding the Poverty Dynamics in Kenya' in his paper seeks to identify as well as examine the reasons for poverty especially household poverty movements in the country. The research study takes an asset-based approach and does the analysis depending on different livelihood levels. The author's aims at identifying the comparisons and similarities between the components that are significant in understanding poverty in the household level. The methodological approach by the study combined both qualitative and quantitative methods in an attempt to capture the variability and levels of aggregation. The author also concludes by identifying the livelihood zones in the country and differences in trends, determinants and levels of poverty in the identified livelihood zones. Poverty reduction interventions are also mentioned and recommended. One major significance of the paper was that it explained poverty especially household poverty at a deeper level and by studying the causes and reasons, determinants and differences, the important poverty dynamics are identified.

(Achia, 2010) takes on a unique approach to studying the determinants of poverty. Instead of using income and expenditure data, the author uses data from the Demographic and Health Surveys and by using this data, the author came up with a specific asset index that assisted in the grouping of households into different social economic status. The aim of the paper was to determine whether data from DHS could actually be used to determine the determinants and correlates of poverty. The model that was used in the study involved a logistical regression that considered the socioeconomic status (SES) as the dependent variable and these were regressed against a set of demographic variables which were the explanatory variables. The study proved that DHS data was useful in studying the determinants of poverty due to the correlations identified.

### 2.3.2. EMPIRICAL LITERATURE ON INFORMALITY

There have been several empirical studies that have been conducted on certain aspects of the informal sector and its contribution to the economy. (Manda, 2002) examined the effects of globalization on the labour markets in the country. The author analysed secondary data and derived a few results in line with the informal sector. The economic reform that occurred in the country caused an upswing in the number of unemployed citizens but also increased labour force participation in the informal economy. The economic reform period was characterized by school dropouts, retrenchments in civil service and private companies and

collapse of other private companies. This increased unemployment in the country as well as an increase in the informal sector participation. The author however concludes by highlighting that the insecurity in the informal jobs due to low survival rates as well as declined earnings and increased unemployment worsened the living conditions in the country thereby increasing poverty rates. In the paper, globalization is associated with an increased poverty levels within the country.

Another paper done regarding the same is on the issue of informal sector and unemployment. According to (Philip, 2013), the informal sector in Nigeria can be tapped by the government in reducing unemployment levels in the country. As highlighted in the study, job creation and employment are one of the key agendas in most if not all countries. The author analyses both primary and secondary data in examining the role of the informal sector in reducing unemployment in the country especially in Kogi state. The model used by the author includes using table and chi-squared statistical tools. In conclusion, the author implies that the informal sector can be a key strategical tool in the social advancement of Nigeria. The author recommends that the government should encourage employment in the informal sector by funding and providing infrastructural facilities.

(Hope, 2013) examines the benefits and the drawbacks of the informal sector in the country. The study is conducted using a more logical approach. The article analyses key aspects of the informal sector such as its nature and characteristics, effects, benefits, and drawbacks on the same. The author mentions that not only is the informal sector directly related with the living conditions of Kenyans, it also improves the standards of living of majority of Kenyans. The poor especially the urban poor are principal beneficiaries according to the article. Due to the increase in the labour supply, the development of entrepreneurial skills and innovation, the creation of a different source of livelihood continues to thrive. With regards to poverty reduction, the author mentions that despite the drawbacks faced in the informal sector, the advantages and benefits in the informal sector outweigh this and should be considered as a key policy framework in reducing poverty in Kenya.

### 2.3.3. NEXUS BETWEEN POVERTY AND INFORMALITY

Empirical studies on the informal sector, its different aspects and their contribution to the economy's development exist globally and being a greater part of the developing countries makes the contribution quite significant. However, studies about the connection and relation

between informality and poverty alleviation are quite a few and more so, the existing ones differ and offer controversial points.

(Orlando, 2001) studies the relationship between poverty and informality in Venezuela. The methodological approach adopted by the author first estimates an earnings model through various determinants and their impact on those working under informal employment. In addition to this, the author also notes the higher possibilities of poverty in the informal sector as compared to the formal sector due to the rate of labour income being lower than the rate of increase of workers in the informal sector. He therefore concludes by mentioning the need to improve certain determinants such as education and capital as a strategy for poverty alleviation. In another paper done in Argentina, the author uses longitudinal data in examining the relationship between poverty and informality in the country (Devicienti, 2009). The model used in this paper is a bivariate random effect probit model using panel data from Argentina. The results from this study show that informal employment and poverty are very persistent at an individual level thus proving the classical causal theory of poverty. Past poverty also relates to current informal employment and vice versa thus proving the interrelated dynamics.

(Timofeyev, 2012), in his study in Russia, concluded that the informal sector in the country does reduce poverty but the impact is too small to be regarded as significant in poverty alleviation. In this paper, the author calculates the labour income of the poor in the informal sector and follows a qualitative comparative approach in comparing that to the wages in the formal sector. In another empirical study done by (Hieu, 2013) in Vietnam, the author tries to examine whether informality accelerates or decelerates poverty. After collecting data from surveys done, the author uses a probit model as well as a quantile analysis regression in analysing his data. The results of the analysis prove that informal earnings help mitigate poverty at a significant level. The results also showed that informal earnings had varied impacts across different household incomes. In as much as it reduces poverty in poor households, the sector was seen to have a negative impact on the economic growth of the richer households (Kume, Enida, 2016), in his paper, analyses the connection between informality and poverty through a bivariate dynamic random effect probit model. The author uses panel data from Albania and concludes that poverty and informality are correlated and persistent at an individual level.

#### 2.4. OVERVIEW OF THE LITERATURE

With regards to the modernization perspective in the informal sector, this theory does not resonate with the background of this study. This is because, while the modernization theory suggests that informality is temporary and would eventually disappear with the modernization of states, the informal sector in the country makes up a higher percentage of the working population and has been growing despite the modernization of the country. The neo-Marxist theory on the other hand suggests that informality thrives with industrialization and globalization due to aspects such as liberalization. In addition to that the neoliberal theory sees informality as a cause of excessive state regulation and cumbersome processes in the formal sector. These two theories therefore form the basis of this study as informality in the country can be seen to a consequence of industrialization as well excess legalities.

The existing literature with regards to informality and poverty in the country is still quite lacking due to the minimal studies done on the same. In addition to this, most studies focus on the causality of informality on household poverty, this study takes the next step by analysing the two-way relationship between the two variables, informal employment and poverty. In the country however, no study has been done with regards to informality and poverty reduction. Studies in the country such as rural investments in accelerating growth and poverty reduction (Thurlow, 2007), microfinance institutions in poverty alleviation (Okibo, 2014) and women's participation in community-based organizations as a strategy for poverty reduction are amongst the few that have adopted a similar approach. However, none of these studies analyse earnings from the informal sector as being related to poverty and poverty reduction. In addition, most of these studies take on a more qualitative and descriptive design. This this report will fill the knowledge gap by taking a more empirical approach and use a bivariate regression model approach in analysing the impacts of the informal earnings on absolute poverty.

### 3. METHODOLOGY

#### 3.1. INTRODUCTION

In this section, the research problem is analysed through both theoretical and empirical models relevant to this study. Consequently, the relevant variables to be estimated are looked into, with subsequent data types, models and analysis being arrived at and used effectively in the methodological approach.

#### 3.2. RESEARCH PHILOSOPHY

Under research philosophy, this study adopts an epistemology approach. This is because it gives provides information and knowledge that is acceptable in this specific area of study. As it is divided into two aspects, that is, resource research and feeling research, this study deals with data from the perspective of the natural scientist and thus uses resource research. Data with regards to informal employment as well as poverty is collected and analysed without manipulation and upon observable entities. This specific type of epistemology is positivism. This is because the research strategy is based upon hypothesis formation and data collection. Quantifiable observations and statistical analysis are also key aspects of the methodology consequently positivism a major aspect of the research philosophy.

#### 3.3. RESEARCH DESIGN

This section highlights the data types that will be used in the empirical estimation. The timescale of the research is also highlighted with regards to the method of data collection. In addition to this, the target population which includes the main participants is also highlighted.

##### 3.3.1. POPULATION AND SAMPLING

The Kenya Integrated Household Budget Survey (KIHBS) in its intent to monitor development initiatives collects data from different households across different domains including national, urban and rural areas. The survey done checks on the following ; household characteristics, housing conditions, education, general health characteristics, nutrition, household income and credit, household transfers amongst others. However, the main target population in this research from the different households includes the working population in the informal sectors of the economy.

##### 3.3.2. DATA TYPES AND SOURCES

The data used in this study is collected from the Central Bureau of statistics in the country, which is the Kenya National Bureau of Statistics (KNBS). Data to be used is thus secondary

data obtained from already conducted household surveys in the country. Despite the different household surveys in the country, the most relevant and updated survey that is most convenient for this study is the Kenya Integrated Household Budget Survey 2015/2016 (KIHBS). This survey is used to capture a wide range of socio-economic indicators, such as demographic, education, health, household consumption, expenditure patterns and sources of household income. Due to the limitations that come with availability of data, the KIHBS surveys are quite minimal and in that regard this study will employ a cross sectional data analysis by observing the different variables as illustrated in the 2015/2016 survey.

#### 3.4. DATA ANALYSIS

This section gives a summary of the collected data and interpretation of the data. This is done through use of conceptual or theoretical approaches as well as empirical or analytical models to determine the different relationships and patterns or trends in the identified variables. The type of data analysis used for this thesis is quantitative analysis which thus involves analysis and interpretation of data collected, and finds a rationale and comes up with conclusions with regards to main findings.

##### 3.4.1. CONCEPTUAL MODEL

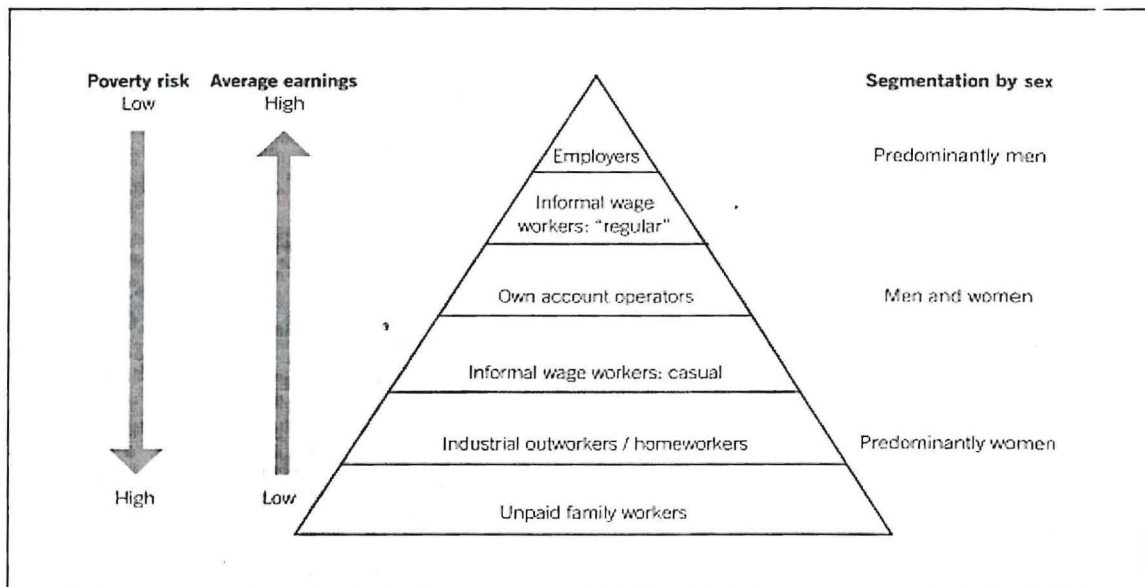
The main hypothesis of this study is that the informal sector has a significant effect in poverty alleviation. Testing this hypothesis implies use of theoretical and conceptual underpinnings that can be used to explain the research problem. Informal enterprises are mostly concentrated amongst the low-income group (Ahmad, 2008). Informal employment therefore provides a source of employment for the unemployed who participate and gain from this realm as it acts as a buffer (Stauffer, 1995).

Modelling this relationship conceptually, informal employment and poverty can be seen to affect each other in both directions. As it can be seen in the informal enterprises, most individuals facing household poverty are most likely to engage in informal jobs. In addition to that, the low earnings from the informal employment can be recognized as cause for household poverty. Other explanatory variables can be drawn out from this relationship. Informality can be attributed to factors such as economic structures, for example, tax rates, excessive state regulations and financial constraints. Other micro-determinants include firm size, cost of entry and productivity.

However, both the dependent variables, informality, and poverty, can be affected by similar factors such as individual characteristics (age, gender, education, occupation), household characteristics (size, number of working occupants) and firm characteristics. Education for example is a factor of both as better-educated individuals can be found in better paying jobs, and poverty can also be seen to increase with the number of individuals in a household (Amuedo Dorantes, 2004). Firm characteristics such as the size of the firm can also be seen to determine the chances of the firm being in informal sector or not.

(WIEGO, 2012) did a review of the links between informality, poverty and gender and came up with a multisegmented model that used data from casual day labourers and industry workers. The conceptual model they came up with employs a hierarchy model of earnings, employment status and sex. In the WIEGO model, average earnings reduced, and poverty risk increased as workers moved down the employment statuses (See figure 1 below). In that regard, the implications of this include: Poverty cannot be reduced unless earnings are increased and costs/risks are decreased in the informal economy and Increasing incomes and reducing costs/risks of the working poor requires changing the legal and regulatory environment as well as providing skills training, financial and business development services.

**Figure 3.4.1. WIEGO MODEL OF INFORMAL EMPLOYMENT AND POVERTY RISK**



### 3.4.2. EMPIRICAL MODEL

The main research objective of this study was to examine the relationship between the two phenomena, that is, poverty and informal employment. This study thus follows a quantitative

data analysis in the methodological approach. The empirical model to be estimated is a bivariate regression model as estimated by (Kume, Enida, 2016), more specifically, a probit model which will use maximum likelihood estimation (MLE) methods and is also corrected for sample selection. The specific probit model used in this approach is the dynamic random-effect probit model.

The advantages of using this model is that the probit model is a better probability model as it overcomes the challenges of linear probability models. This is because predicted probabilities from probit are always between 0 and 1, and they incorporate non-linear effects of X as well.

The model used in this study is thus specified as follows.

$$y^*_t = \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \dots + \beta_k X_{kt} + c_1 + u_{1it} \quad (1)$$

$$y_t = 1\{y^*_t > 0\} \quad t=1,2,3,4,\dots,T \quad (2)$$

Where;

$y^*_t$  is a dummy variable and it represents the dependent variables.  $y^*_{it}$  represents the risk or chance of being in poverty at time t.

$X_{it}$  representing the explanatory or independent variable is primarily the informal sector earnings. With the explanatory variable being earnings from the informal sector, we are able to determine how poverty situations respond to earnings from the informal sector thus analyse their effect in poverty alleviation.

Other explanatory variables to be used in this study will include both individual and household level characteristics; Age, Gender, Level of education, household head and size. These are exogenous variables meaning they are determined outside the model.

$\beta_1, \beta_2 \dots \beta_k$  are the parameters to be determined in the model.  $c_i$  is included in the model for conditional maximum likelihood estimation. They are included as they consider the initial values and the history of exogenous variables. This allows for specific random effects or probabilistic effects to be accounted for. (Wooldridge, 2005).  $u_{it}$  is the error term. The error term follows a normal distribution and therefore has a zero mean, with a constant variance.

### 3.5. DEFINITION OF VARIABLES

The dependent variables used in this model estimation are poverty and informal employment. The independent and explanatory variables to be used in this study will include both individual and household level characteristics; Age, Gender, Occupation, Level of education, household head and size. The reasons for use of these variables include; individual's age and education are found to affect both informality and poverty. Other household's characteristics such as household size and the number of household members working are also expected to affect the likelihood of poverty and informality. (See Table 1 and 2 below for definitions )

*Table 1;DEPENDENT VARIABLES*

<b>Dependent Variable</b>	<b>Definition</b>	<b>Indicators</b>	<b>Scale of measurement</b>
Poverty	The state of being unable to meet the minimum levels of basic needs i.e. income, food, clothing, healthcare, shelter, and other essentials	Poverty headcount ratio	Poverty headcount ratio is the percentage of the population living below an estimated poverty threshold or poverty lines. National thresholds or estimates are based on population-weighted subgroup estimates from household surveys.

Table 2; INDEPENDENT VARIABLES

Explanatory Variable	Definition	Scale of Measurement	Expected relationship with dependent variable (Poverty)	Authors (Years)
Informal Sector Earnings	This refers to income acquired from employment in informal sector enterprises. The informal sector enterprises are activities and jobs that are not monitored nor regulated by the government and are neither taxed nor protected by the state.	Firm characteristics such as not being registered or having contract arrangements with employees.  Payment of contributions to pension funds and paid annual leaves.  Having social protection systems and insurances.  Measures along a nominal scale.	Negative	(Hieu, 2013)

AGE	Length of time of existence	Years. Ordinal measurement. Ranked and grouped into age groups	Negative	(Hieu, 2013)
GENDER	Either of two sexes	Nominal (1=Male,0-Female)	-	(Devicienti, 2009)
EDUCATION	Acquisition of knowledge, skills, habits. Learning	Ordinal. Can be ranked. (1=primary, 2=secondary, 3=university)	Negative	(Hieu, 2013), (Kume, 2016)
HOUSEHOLD SIZE	Number of members in a household	Ordinal. Can be ranked and grouped	Positive	Kume, 2016)

## 4. ANALYSIS AND RESULTS

### 4.1. INTRODUCTION

This chapter deals with the research findings and the results of the data analysis.

### 4.2. DESCRIPTIVE STATISTICS

From the summary statistics, the average household informal income was found to be Ksh.49721. The minimum income from the informal sector was Ksh.540, with a maximum of Ksh.720,000. Informal Income had a skewness of 3.8178 and a kurtosis of 22.08332. A high kurtosis level implies that Informal Income is heavy-tailed and that it has quite a number of outliers. The household size had a mean of 4.09, and age with a mean of 35.01. Household Size had a skewness of 0.9445805 and a kurtosis of 4.02616. The low kurtosis in the size of household means that this specific data set had very few outliers or is light-tailed. The variance of the household size was estimated to be 6.573798. The minimum household size was 1 with a max of 14. The minimum age was 12 and the maximum was 78. Age had a skewness of 3.258552 and a kurtosis of 27.52335. Gender and Education are string variables. However, tabulating them gives us a proper presentation of their summary statistics. The probability of being poor given by the binary values 0 and 1, had a skewness of 0.93198 and a kurtosis of 1.868591.

More males participated in this survey as can be seen by tabulating the gender variable. Education levels also varied with the majority of people having acquired both primary and pre-primary levels of education.

*Table 3; DESCRIPTIVE STATISTICS*

Variables	Observations	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Informal Income	276	49721.52	85203.421	540	720000	3.818	22.083
Household size	277	4.097	2.564	1	14	.945	4.026
Poor	277	.289	.454	0	1	.932	1.869
Age	277	35.014	17.917	12	200	3.259	27.523
female	277	.134	.341	0	1	2.154	5.641
Education	277	1.729	.857	1	4	1.137	3.707

### 4.3. REGRESSION

While doing the regression, the ordered probit regression in Stata was efficient in our model. This is because the model used is a binary response model meaning that our dependent variable Y can only take two variables, 0 and 1. We employ the ordered probit model as it is efficient for ordinal regression whereby the values along the arbitrary scale are significant according to a relative ordering. The results of the ordered probit regression are illustrated in the table and discussed below.

*Table 4; ORDERED PROBIT RESULTS*

Poor	Coefficient.	Standard Error.	t-value	p-value
Ln Informal Income	-.005	.081	-0.06	.02
Household size	-.087	.047	-1.85	.034
Age	-.005	.008	-0.71	.004
female	-.357	.417	-0.86	.001
EDUC	-6.181	300.802	-0.02	.01
Constant	-7.071	300.804	.b	.b

The likelihood ratio chi-squared value and the p values are suitable in describing the fit of the model, that is, the goodness of fit. In the model, LR chi2(5) represents the Chi-Square test statistic. Our chi-squared value was 161.33. The p-value associated with the chi-squared value is represented by prob>chi2. In our model, the p value is 0, less than the 0.05 level of significance. Thus, we fail to reject the null that the model contains the full set of predictors relative to an intercept only model.

The coding in our dependent variable was 0 for probability of not being poor and 1 for being poor. We modelled this binary outcome using the 2020 Comprehensive Poverty Report, whereby the poverty threshold or poverty line was found to be at Ksh 3252 and Ksh 5995 in rural and urban areas respectively. Consequently, an individual whose earning is below the poverty line is considered to be poor. A positive coefficient in our regression means that a higher value increases the probability of a household being poor. The logarithm of informal income instead of informal income is used as the natural log is more normalized.

From our results, the coefficient of the natural logarithm of informal income was statistically significant with a coefficient of -0.00489, proving an indirect relationship between poverty and informal income. A one unit increase in informal income thus reduces the probability of the household being poor by 0.4%. Here, despite the debate on informal income, our results represent the optimistic view that informal income plays a significant role in reducing poverty. The results are in line with the findings of (Kume, Enida, 2016) who in his paper

found that poverty and informality are correlated and earnings from the informal sector have a positive significant impact in poverty alleviation. (Devicienti, 2009) who researched on informality and poverty in Argentina also found similar results and thus results gathered, are quite similar and both support the positive theory that informal sector does actually help reduce poverty.

A statistically significant coefficient for education which was at -6.1814 shows that an increase in the educational level (pre-primary, primary, middle-level and university) of the household head significantly reduces the probability of being poor, implying that a higher level of education provides greater opportunities for a better job and, subsequently, a higher income. Education and vocational training of the head are other factors significantly helping the household to get out of poverty. As illustrated by (Geda, 2001) who studied the determinants of poverty in Kenya highlights education levels as one of the major determinants of poverty. On the causal theories of poverty, the neoclassicals identified barriers to education as being among the key causes of poverty. The results are thus expected from theory. The negative relation between poverty and education were also found in other empirical studies by (Hieu, 2013) and (Kume, 2016).

The probability of being poor represents a convex function with respect to the head's age. This can be seen from the negative sign of age's coefficient (-0.005454) and the positive sign of age square's coefficient (0.00788). This implies that the chances of being in poverty reduce with a higher age of the household head. The relationship between age and poverty is nonlinear. This shows that the contribution of age on poverty alleviation will decline when age of the head rises. (Hieu, 2013) in his study in Vietnam illustrates similar results and found an indirect relationship between poverty and age. This is expected as the older the household head, the less productive and thus probability of poverty rise with age.

However, our results represent a pessimistic view with regards to household size. As it is expected that an increase in the number of household members significantly increase the probability of being poor, our results prove otherwise (negative coefficient at -0.08715). (Kume, 2016) found opposing results and as is expected, the larger the household size, the higher the chances of poverty. This study found different results and this could be as a result of the limitations on the survey data which due to missing data might have biased our data. Gender was identified as having no relation with poverty, (Hieu, 2013). However, according

to our results, it is evident that female-headed households are most likely to reduce the probability of being poor.

In our model, we also estimated the ordered probit marginal effects. Marginal effects show the change in probability when the independent or explanatory variable increases by one unit. Our ordinal probit model onl has 2 categories, that is, 0 for not poor and 1 for poor. The results are published in the table below. The change in probability of being poor for one instant change in LnInformal Income was 0.0026 pp(percentage points), 0.00464 pp for Household size, 0.000290 pp for age, 0.019 pp for Female and 0.32918 pp for Education. However, only age and educaion were found to be significant according to their p-values.

*Table 5; MARGINAL EFFECTS RESULTS*

	dy/dx	Standard Error	z	P>z
Ln Informal Income	0.00000261	0.001	0.000	0.08
Household size	0.0000464	0.018	0.000	0.32
Age	0.00000290	0.001	0.000	0.008
Female (Gender=1)	0.0001902	0.075	0.000	0.07
Education	0.0032918	1.133	0.000	0.004

## 5. CONCLUSION

This thesis paper is an attempt in studying the relationship between poverty and informal income in Kenya. In the paper, an ordered probit model is employed both binomial and polychotomous logit models using the 2015/2016 KIHBS (Kenya Integrated Household and Budget Survey) Survey data. The paper considerably contributes to the literature of informality as well as poverty. This is through the application of an ordered probit model to investigate the relationship between informal income and probability of being poor. In this paper, we identified various factors alongside Informal income, such as levels of education of the household head, gender and age of the household head and the household size as statistically significant determinants of the probability of being poor.

In this research study, collection of data was a key limitation to the study. The inadequacy of recent survey data limited the study to only KIHBS 2015/2016 and with the dynamic nature of the variables, the data might not be very efficient for future forecasts. Our econometric model shows that income from informal sources significantly alleviates poverty, which supports the optimistic point of view. There is therefore enough evidence that supports the role of informal earnings in decelerating poverty probability. Increasing income in poor households suggests that poverty reduction programs should closely link with the informal employment and the informal sector.

### 5.1. RECOMMENDATION

In the Kenyan economy, where the existence of informal economy is inevitable especially due to formalization not being effective enough to absorb labour from the informal sector, the government should have supporting policies to decrease disadvantages of the informal sector and informal employment, especially the informal sector and informal employment yielding low income. So far as the policy implications of this study are concerned, it is evident from the results that increasing income in the informal sector will play a significant role in poverty alleviation. The government can do this by expanding the informal sector, enhancing productivity as well as through financial aids and assistance to the workers under informal employment.

A number of policy conclusions can also be drawn from the results. Firstly, the educational attainment of the head of the household (in particular middle level and university education) is found to be an important factor that is associated with poverty. Lack of education is a

factor that accounts for a higher probability of being poor. Thus, promotion of education is central in addressing problems of moderate and extreme poverty. The importance of female education in poverty reduction should also be noted. From our descriptive statistics, females that have an advanced level of education are quite few as compared to males. This is very important as our regression suggested a positive outlook on the poverty situation with regards to having a female household head. Thus, promoting female education should be an important element of poverty reduction policies. One of the ways this can be achieved is through organizations such as Women's Institute for Secondary Education and Research (WISER) and Beads for Education which aim in keeping female learners in school. A special effort should be made so that education and training program, which consistently mitigate poverty, is reachable for the poor. Amongst the policy programs aimed at promoting education is affirmative action which enables learning institutions to take better and greater strides in making admissions accessible to all. Excluded groups, including the poor, are therefore given opportunities to better their situations by attending school.

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7. APPENDIX

Figure 1: Descriptive analysis

. sum InformalIncome Householdsze Age

Variable	Obs	Mean	Std. Dev.	Min	Max
InformalIn~e	276	49721.52	85203.42	540	720000
Households~e	277	4.097473	2.563942	1	14
Age	277	35.01444	17.91687	12	200

. sum Poor

Variable	Obs	Mean	Std. Dev.	Min	Max
Poor	277	.2888087	.4540291	0	1

. tab Gender

Gender	Freq.	Percent	Cum.
Female	37	13.36	13.36
Male	240	86.64	100.00
Total	277	100.00	

. tab EDUCATION

EDUCATION	Freq.	Percent	Cum.
Middle-level	23	8.30	8.30
Pre-primary	132	47.65	55.96
Primary	105	37.91	93.86
University	17	6.14	100.00
Total	277	100.00	

. tab Gender EDUCATION

Gender	EDUCATION				Total
	Middle-..	Pre-pri..	Primary	Univers..	
Female	5	10	17	5	37
Male	18	122	88	12	240
Total	23	132	105	17	277

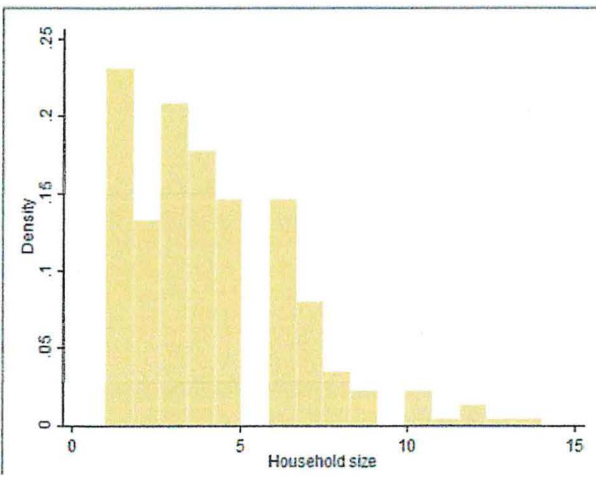
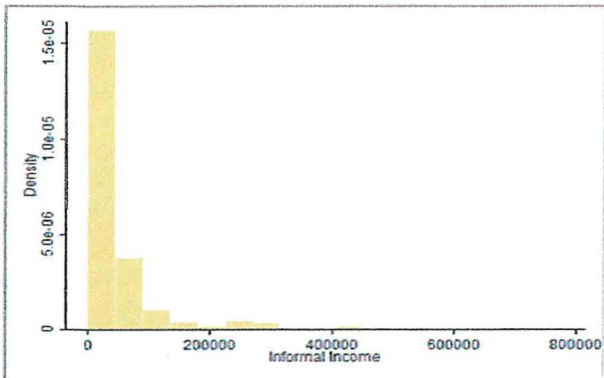
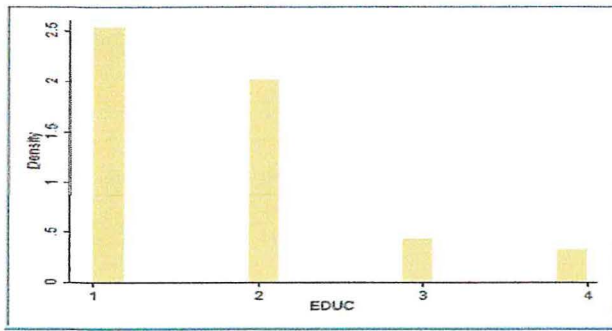


Figure 2: Ordered Probit

Ordered probit regression

Number of obs = 276  
LR chi2(5) = 161.33  
Prob > chi2 = 0.0000  
Pseudo R2 = 0.4855

Log likelihood = -85.493571

Poor	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
LnInformal	-.0048929	.0809524	-0.06	0.02	-.1635568 .153771
Householdsize	-.0871492	.0470664	-1.85	0.034	-.1793977 .0050993
Age	-.0054548	.0076405	-0.71	0.004	-.0204299 .0095203
female	-.3572154	.4167719	-0.86	0.001	-1.174073 .4596426
EDUC	-6.181418	300.8023	-0.02	0.01	-595.7431 583.3803
/cut1	-7.071312	300.8037			-596.6357 582.4931