DETERMINANTS OF URBAN HOUSEHOLD POVERTY IN
KIRKOS SUB CITY OF THE ADDIS ABABA CITY
ADMINISTRATION, ETHIOPIA

BY

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DETERMINANTS OF URBAN HOUSEHOLD POVERTY IN KIRKOS SUB CITY OF THE ADDIS ABABA CITY ADMINISTRATION, ETHIOPIA

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DECLARATION

I hereby declare that this thesis is my own work and has never been presented in any other university. All sources of materials used for this thesis has been appropriately acknowledged.

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ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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St.Marry's University, Addis Ababa December 2020

APPROVAL OF BOARD OF EXAMINERS

As a member of the Board of Examiners of the Master Thesis open defense examination, we testify that we have read and evaluated the thesis prepared by Dilala Hulala under the title "Determinants of urban household poverty in Kirkos Sub City of the Addis Ababa city administration, Ethiopia". We recommended that this thesis to be accepted as fulfilling the thesis requirement for Degree of Master of Arts in Development Economics.

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ABBREVIATIONS

ACSI   Addis Credit and Saving Institute

CBN   Cost of Basic Needs

EIA   Environmental Impact Assessment

ETC   Ethiopian Telecommunication Corporation

FDRE   Federal Democratic Republic of Ethiopia

FEI   Food Energy Intake

HDI   Human Development Index

JMP   Joint Monitoring Program

NGO   Non-Governmental Organization

MoFED   Ministry of Finance and Economic Development

UNICEF   United Nation Children Fund

UNDP   United Nation Development Program

WB   World Bank

WHO   World Health Organization

CHAPTER ONE INTRODUCTION

1.1   Background of the study

Poverty is a global concern. Proportion of the population that lives below poverty line is quite high. In cities across the globe, hundreds of millions of people exist in desperate poverty without access to adequate shelter, clean water, and basic sanitation. In the year 2002, 746 million people in urban areas were living on less than $2.00 a day (Ravallion 2007:16). In the absence of an invariably acceptable national poverty line for Ethiopia, we decided to use the official poverty line constructed by MOFED in 2010/2011. That is, a household is deemed as living in poverty if the per capita consumption is less than equal Birr 3781 otherwise the household will be considered as non-poor. According to FGE (Feed Geen Ethiopia) estimate, poverty head count index in 2015 and in 2012 in Ethiopia was about 22% and 31% respectively, which was 45% in 1995. According to the study findings of the same researchers, poverty continues to be a major impediment to human development and economic progress of the world. Therefore, knowing how many people lives in households with income or consumption expenditure below the "poverty line" has helped to raise the attention of researchers" to study about the extent of poverty; and has informed policy makers for fighting poverty. In line with this, the aim of this paper is to discuss different key correlates/determinants of poverty (such as gender, marital status, household age, household size, education, employment type, housing condition, health, asset ownership and income/ total household expenditure), in Kirkos sub city ,and to draw possible conclusions and provide policy implication based on the study findings.

Ethiopia is a country where the majority of the population is poor and there is a significant variation in individual and household level experiences of poverty. The Ethiopian population is predominantly rural, with only around 16% living in urban areas. With per capita gross national income of a mere USD 380 (World Bank Group, 2011); Ethiopia is among the poorest countries in the world. Moreover, for decades poverty in Ethiopia has remained pervasive and ever-deepening, in spite of considerable macroeconomic stability achieved following the policy reforms of mid-1990s. According to UNDP (2011), still Ethiopia's score of human development index 0.363 (which is 174 out of 187) is among the lowest in the world. The HDI of Sub-Saharan Africa as a region increased from 0.365 in 1980 to 0.463 today, placing Ethiopia below the regional average.

In Ethiopia, many urban people don't meet their basic needs. According to the official statistics (FDRE2003), the proportion of the urban population under food poverty (those persons whose food expenditure per adult equivalent was less than the food poverty line) was 47 percent in 1999/00 as compared to 41 percent in rural areas. Moreover, between 1995 and 1999/00, the urban food poverty head count index increased by 43.7 percent (FDRE, 2002).

A report entitled "dynamics of growth and poverty in Ethiopia" (MoFED, 2004/05) indicated a notable drop in the incidence of rural poverty (a decline in the rural head count index from 47.5% to 39.3%). However, measures of aggregate inequality declines very slightly in rural areas from 0.271 to 0.260; but, rises sharply in urban areas from 0.338 to 0.436.

There is little evidence on poverty trends in urban areas with much of the discussions focusing on cross-section evidences. Tadesse (1998) showed the trends in urban poverty between 1995 and 1997 using subjective and objective (consumption) poverty lines. His findings show that poverty slightly increased according to the subjective poverty lines (SPL); and decreased according to the consumption poverty lines. When we look at the disaggregated results, we observe heterogeneous trends across cities. Poverty has decreased in Addis Ababa, Awassa and Mekele while it increased in Bahir Dar, Dessie, Dire Dawa and Jimma according to SPL. According to the consumption poverty line, poverty has decreased in Addis Ababa, Awassa, Bahir Dar, and Mekele; and relatively increased in Diredawa and Jimma. The poverty level, however, remained the same in Dessie (Tadesse, 1998).

Bigsten (2003) reported poverty trends (using consumption poverty lines based on Ravallion and Bidani, 1994) for urban Ethiopian between 1994 and 1997. Accordingly, for all urban areas, the study showed an increase in poverty from 1994 to 1995 and a decline in poverty from 1995 to 1997. Likewise, according to Tadesse (1998), the trends vary by cities. Between 1994 and 1995, poverty was reported to have declined in Addis Ababa, Awasa, Bahir Dar and Jimma; while it increased in Dessie, Diredawa and Mekele cities.

Currently, unemployment and underemployment have become critical problems in Ethiopia. The unemployed citizens in urban Ethiopia are relatively well-educated. For example, most 3

Young adults who completed 12 years of schooling, but fail to pursue their studies further are Unemployed. In addition, due to the recent economic reforms, the Ethiopian government has stopped the allocation of graduates of higher institutions of learning to provide employment opportunities since 1992. This, currently, creates a serious unemployment and

underemployment problems in Ethiopia (Abi and Kedir, 2003).Rate of unemployment in Ethiopia ranges between 16.8-26.4% in 2017 (Trading Economics 2018).

Even though the government of Ethiopia has tried to address some problems related to poverty, the focus given to urban areas does not relate with the extent of the problem. High population growth due to migration, food price increase, and unemployment has made life difficult in urban Ethiopia (Abi and Kedir, 2003).

1.2   Statement of the problem

There is a seemingly widely held perception that poverty is urbanizing rapidly in the developing world Indeed, some observers believer that poverty is now mainly an urban problem. In an early expression of this view, the distinguished scientific journalist and publisher Gerard piel (1996) explained   at an international conference that (the world's poor once huddled largely in rural areas). In the modern world they have gravitated to the cities. (Piel, 1997:58). "Urbanization of poverty", which means a rising share of the poor living in urban areas, has been viewed in very different ways by different observers. To sum up, urbanization of poverty has been seen as a positive force in economic development, as economic activity shifts out of agriculture to more remunerative activities, while to others(including piel), it has been viewed in a less positive light a largely unwelcome carrier of new poverty problems. Ethiopia is one of the African countries with the highest rate of population &urbanization. Such high growth rate of Ethiopian population & urban centers presents enormous challenges to the nation. One of the developmental challenges facing Ethiopia today is unemployment. Ethiopia has experienced high population growth in the past decades, increasing on average by 2.88 percent per year between 1980 and 2015. Ethiopia, Africa's oldest independent country, is located in the Horn of Africa and a peninsula in northeast Africa. The country has an area size of roughly 1,126,829 square kilometer, making it the 10th largest country in the continent and 2nd in its population with an estimate of 108.6 million people (UN, 2018).Ethiopia's economy has experienced strong, broad-based growth. The last decade witnessed multiple challenges to the Ethiopian economy: there was severe drought caused by El Nino, political instability, and a slowdown in the global commodity prices as well as in the global economy. Despite these challenges, GDP growth averaging around 10% over the last decade to a regional average of 5.4%. In 2016/17 real GDP increased by 10.9% from the 8.0% registered in 2015/16Ethiopian Economics Association(EEA, 2017),African Export-Import Bank (AEIB, 2018).In 2017 Gross Domestic

Product (GDP) and the per capita GDP in Ethiopia was worth 80, 561,496,134 and 768 USD respectively (WB, 2018).

Urban poverty rates in Ethiopia are quite high, particularly in the large cities. The total national poverty head count in 2011 was 29.6 percent (30.4 percent in rural Ethiopia and 25.7 percent in urban areas). Poverty rates in Addis Ababa and Dire Dawa were as high as 28.1 percent and 28.3 percent, respectively. The poverty gap index is estimated to be 8 percent in rural Ethiopia and 6.9 percent in urban Ethiopia. From 2005 to 2011, consumption growth was negative for the poorest 15 percent of the urban population and for the majority of households in Addis Ababa as wages did not increase to compensate households for the rising food prices that they faced. One-fifth of Ethiopia's urban population lives in Addis Ababa and reducing poverty rates in this and other large urban centers is a key priority toward addressing poverty reduction in Ethiopia (PIM, 2016).

Food insecurity in urban settings is chronic and complex. The root causes of food insecurity in urban areas are: unsystematic rural-urban migration (that is urban rural migration not guided by economic indicators); lack of adequate employment opportunities; lack of integrated social protection for disadvantaged groups; underutilized potential of urban agriculture; lack of modern market exchange system; lack of efficient service delivery; lack of conducive working environment; poor solid and liquid waste management; and environmental, natural and man-made hazards .As a result, a significant number of people in urban areas are unemployed and underemployed and as a result, they are facing food insecurity and living in difficult circumstances. Moreover, the number of street dwellers, beggars, people with mental disorder, juvenile delinquency, disadvantaged groups and other victims of social problems and evils are increasing from time to time (PIM, 2016).

To tackle these problems within the framework of the national social protection policy, the Ministry of Urban Development and Housing (MUDHo) has developed an Urban Food Security Strategy, which was approved by the government on May 8, 2015. The strategy aims to reduce poverty and vulnerability among the urban poor living below the poverty line over a period of 10 years. The long-term program framework has an objective of reaching 4.7 million poor in all urban areas by implementing productive and predictable urban safety nets and complimentary livelihood interventions. It is envisaged that this will be achieved over a long-term period through a gradual roll-out plan of different phases starting with big cities having a population of over 100,000 people. (FDRE UPSNP, 2015).

As mentioned above, to the knowledge of the researcher proper socioeconomic studies have not been undertaken for the inner city of Addis Ababa Kirkos sub city more migrants live in this Sub City rather than the rest of 9 Sub City . The researcher has not come across any previous study that assesses the determinants of poverty of kirkos sub city dwellers, in particular. Hence, the aim of this study is to assess the determinants of urban poverty in kirkos sub city, and draw appropriate conclusions with practical policy suggestions based on the study findings.

1.3   Research Objectives

1.3.1   General Objectives

The main objective of the study is to assess the determinants of urban poverty and poverty conditions in Kirkos sub city.

1.3.2   Specific Objectives

The specific objectives of the study include:

- To identify determinants of poverty related to household head′s characteristics such as age, sex, and marital status, family size, household head educational level, health and employment;
- To determine the significant difference in households' poverty coping strategies among the types of household and to identify the determinant factors that influence poverty level of household in the Kirkos Sub City.

1.4   Significance of the study

The study is expected to specifying the poor from the non-poor; and this may help in reducing the prevalence of poverty with targeted interventions in kirkos sub city. No similar study has been conducted in this area before as to the knowledge of the researcher. This research, therefore, will serve as a springboard for future studies. The findings of the study may also be used as an input for any interested stakeholders/actors who in one way or another are engaged in the development of the city, facilitating future investment efforts.

1.5   Scope and Limitation of the study

This study is undertaken to assess the main determinants that lead urban households to poverty; and it covers three sample wereda (Wereda 11, Wereda 7 and Wereda 10).The sampled kebeles were 13, 15, 23, 24 and 30.From the total of eleven wereda administrations of in kirkos sub city. The study also covers relevant socio-economic and demographic characteristics of households. Urban poverty is a function of multitude factors. In this study, only some variables, which were assumed to affect the incidence of poverty dominantly, are included. The all wereda under the sub city administration are not part of this study due to differences in their socio economic characteristics and lack of time and resources to collect data.

Some sensitive variables such as income and properties (assets) may not to be correctly obtained and valued since respondents may be reluctant to tell their correct income and income status. The responses, therefore, are not 100 percent perfect.

1.6   Organization of the Thesis

The research report contains five chapters. The first chapter covers background of the study, statement of the problem, significance, and objectives of the study, the scope and limitations of the study. The second chapter presents review of relevant literature including previous studies relating to the determinants of urban households poverty. The third chapter presents/discuss the research methodology. The fourth chapter presents analysis results and the discussions of the findings of the study; while chapter five presents the conclusions and policy implications of the study.

CHAPTER TWO

REVIEW OF RELEVANT LITRATURE

2.1. Definition and conceptualization of poverty

The concept of poverty seems simple which doesn't worth to discuss it in detail. Nevertheless it is not as simple as we think of it if you go deep into it. This is due to its multifaceted nature and dimension. A lot of scholars have been busy finding the tangible concept of poverty and agreed that it has various angles in different professionals. It has also various interpretations in economic, social, political, institutional, environmental and cultural contexts. Because of its variation in different scholars, disciplines and interpretation various approaches have been employed to understand the concept of poverty.

Todaro and Smith (2003), renewed development economists, draw the inequality approach to conceptualize poverty based on observable phenomena. They differentiate the economic gap between the rich and poor as to how poverty operates in a given society and how one can conceptualize it. Based on this they attempted to look at the nature and the size of the differences between the bottom 20 or 10% and the rest of the society. To remedy the problem distribution from the rich to the poor can make substantial development all poverty in most society. It is however important to note that poverty and inequality are distinct concepts and neither subsumes the other though they share close meanings.

Poverty is widespread in Ethiopia with a significant proportion of the population lacking the basic necessities of life, such as lack of food, decent clothing, and shelter. In addition, lack of access to education and medical care, widespread unemployment and lack of income also exacerbate the magnitude and severity of poverty in the country (Abebe, 2002). Urban poverty in Ethiopia is particularly manifested by lack of the basic facilities in and around the house. Lack of adequate shelter, poor sanitation, lack of access to safe drinking water, and absence of proper toilet facilities are characteristics of urban poverty (MOFED, 2004). According to Meheret (2003), the manifestations of urban poverty include widespread beggary and prostitution; a growing urban population of homeless street children; and high youth and adult unemployment. The poor in Ethiopia are entwined in a web of interrelationships between the various determinants of poverty. Intrinsic deficiencies in the resource base of the Productive forces have become critical drawbacks in alleviating the

poverty situation. Lack of equity in the access to productive resources and basic services and their consequential benefits as well as lack of access to opportunities to develop skills and human capabilities have impeded the socio-economic development of the poor.In addition, absences of the means by which the poor can address their problems and enhance their active participation in decision-making have hindered their attempts to move out of the state of deprivation (Asmamaw, 2004). Vulnerability in urban areas takes the form of being almost continuously on the edge of insufficient food for daily maintenance, and often falling below that line. It also involves crowded and insanitary living conditions in poor quality housing squatting in shacks made of plastic and scraps of wood, and exposure to personal danger. Factors predisposing to vulnerability included lack of education and skills, and inability to start-up self-employment enterprises due to lack of savings or credit. The most prevalent complaints concerned the rising cost-of-living, the prevalence of petty crime and theft, the extent of unemployment, and sanitation problems (MOFED 2005).

Ethiopia has one of the highest adult and youth illiteracy rates in the world as well as in sub-Sahara African countries (MOFED, 2002). As the experience of several developing countries has shown, lack of education is highly correlated with poverty. Accordingly, development is considered to be impossible without widespread literacy which is the pre-requisite for acquisition of better skill and knowledge (Asmamaw, 2004). In Ethiopia, for example, poverty indices are higher for illiterates than literates by 45% in rural areas and by 85% in urban areas (MOFED, 2002). Shortages of housing and poor housing conditions are visible manifestations of poverty (Goitom, 1996). Poverty leads to poor-quality housing, but poor-quality housing also acts upon poverty. The quality of the house and its environment directly affects the health of the occupants as well as the educational achievements of their children. Women and girls are often responsible for the cleaning of the house, and a poorly constructed house increases their workload and reduces the time available for more productive activities. Because many of the poor use their house also as a shop or workshop, an eating place or rental accommodation, the quality of the house directly affects their income (UNEASC, 2007). In Ethiopia, at least 70% of the urban population can be considered slum dwellers based on quality of housing, living space access to infrastructure and services, security of tenure and citizenship rights. Inadequate shelter, combined with poor sanitation, overcrowding, and high proportion of vulnerable women, youth, children elderly and destitute with very low incomes and high unemployment result in a high risk of diseases and an extreme poverty trap for many urban residents (GOE2006, cited in World Bank, 2007). In

most developing countries, young women and men face the choice of informal work or no work at all. Young people actively seeking to participate in world of work are two to three times more likely than older generations to find themselves unemployed. The cost of youth unemployment to economic and social development is very high. It perpetuates the inter-generational cycle of poverty and is associated with high-levels of crime, violence, substance abuse and the rise of political extremism. For young women, the danger of entrapment in the sex industry is widespread (ILO, 2003). Urban poverty in Ethiopia is highly connected with the lack of employment opportunities. According a report by CSA, (2010), the rate of unemployment for urban areas was 20.4% in the year 2009. In general, unemployment in Ethiopia seems to be an urban phenomenon, being prevalent mainly in the cities. The majority of the unemployed are young people with modest levels of formal education (CSA, 1994). The high proportion of young persons among the unemployed is due to the rapid expansion of education, which promotes large number of school-leavers to aspire to urban wage-earning jobs far in excess of the number of opportunities available (EEA,1999). Expansion in education and training opportunities, barring quality problems, is an achievement in its own merit as it increases general human capital and meets the basic rights of children and the young. Nonetheless, uncoordinated and supply driven expansion in education and training may amount to the creation of an army of dissatisfied youth in the end (Getinet, 2003). The health service coverage in Ethiopia is one of the lowest in the world. The potential health services coverage (PHSC), for instance, was limited to 51.2% of the population in 2000/01. There were only four physicians per 100,000 people in 2000. The average infant mortality rate per thousand was 106.1 and the total fertility rate was 6.8% (OECD, 2001cited in Mulat, Fantu, and Tadele, 2003).

The basic needs criterion: this approach views poverty as deprivation in terms of various material requirements including food and other basic needs such as: access to basic health, shelter, education, adequate and safe housing, access to safe drinking water, sanitation and so on (Getachew 2009). Yared (2005) tried to explain the limitation of basic needs approach as a definition and measure of poverty. He argues that the set of basic goods and services is different for different individuals depending on age, sex and type of activity.

The capability criterion: What is emphasized in this school is neither the economic wellbeing nor the basic needs deemed to satisfy the minimum standard by the society. It is nevertheless, human abilities or capabilities to achieve a set of functioning. This is an

alternative criterion for the definition and measurement of well-being which tells the extent to which people have capabilities to be and to do things of intrinsic worth. Sen (1987:109) introduced the notion of capabilities in poverty definition and assessments. He defined poverty not only as a matter of low level of well-being, but also as lack of ability to pursue well-being precisely because of lack of economic means. He wrote that "the value of the living standard lies in the living and not in the possessing of commodities". Such an approach to the definition and /or measurement of poverty suggests a broader set of criteria for assessing poverty than just income and/or consumption. This approach, thus, incorporates the problem of social exclusion or marginalization in the idea of poverty; and is therefore; much broader than even the basic needs perspective. This approach is particularly relevant for gender differentials because even women belonging to non-poor households by the income or basic needs criteria may be absolutely deprived in terms of the capability criterion.

Given the complexities of poverty concept and its definition, the fundamental question that comes uppermost in the analysis of poverty is the derivation of poverty line. In the derivation of poverty line scholars use different methods. The poverty threshold, or poverty line, is the minimum level of income deemed adequate in a given country. The common international poverty line had in the past been roughly $1 a day (World Bank, 2000).

2.2. Measuring poverty

Consumption as an indicator of welfare and cost of basic need approach (CBN) to fix poverty line is used in this paper. According to Jonathan and Shahidur (2009) consumption rather than income is viewed as the preferred welfare indicator for the following reasons since consumption better captures the long-run welfare level than current income; it may better reflect households' ability to meet basic needs; it reflects the actual standard of living (welfare); it is better measured than income; income is likely to be understated than consumption expenditure; income is so erratic and seasonal that it may be very difficult for respondents to recall.

The most widely used method of estimating poverty line is the cost of basic needs method (WB, 2005) because the indicator will be more representative and the threshold will be consistent with real expenditure across time, space and groups. According to this approach, first the food poverty line is defined by choosing a bundle of food typically consumed by the poor. The quantity of the bundle of food is determined in such a way that the bundle supplies

the predetermined level of minimum caloric requirement. It is at least 2,200 KCa intakes per day that will leave an individual not to be poor (MoFED, 2012). The bundle that gives 2,200KCa is valued at regional average prices to get a consistent poverty line across the region. Then a specific allowance for the non-food goods and services consistent with the spending of the poor is added to the food poverty line.

Although the choice of poverty line is always arbitrary, the common argument is that there is a minimum level of consumption of goods and services below which it is difficult to sustain our life. Hence, in order to get the poverty line, it demands thorough (systematic) work in that the level and type of goods and services must be accurately identified. Although there is a debate on how to exactly arrive at different levels of goods and services due to the presence of regional price difference, various commodities and individuals preferences, it is tolerable that a carefully examined work can give good estimation (World Bank, 2000). In the construction of poverty lines, two methods can be employed. The first is to directly use current consumption of goods and services as an indicator of well-being. This requires identification of the minimum bundles of goods and services, which an individual has to consume. In this case, the bundle serves as a border line between the poor and non-poor. The second method uses income as a parameter to identify an individual as poor or non-poor. This necessitates specifying minimum income that enables an individual to achieve consumption of minimum bundle of goods and services defined by the minimum socially acceptable level. Various methods have been employed in constructing poverty lines. The most popular methods, however, are Food Energy Intake (FEI) and the Cost of Basic Needs (CBN) as cited Getachew (2009).

2.2.1. Food Energy Intake (FEI) approach

This FEI approach locates the poverty line as the income or consumption expenditure level just adequate to meet a predetermined food energy intake to an individual. The level of FEI, very much, depends upon the preference, activity, age and sex of an individual which could be obtained by finding the consumption expenditure or income level at which the person attains the food energy level (Ravallion and Bidani, 1994).

According to Couldouel et al (2004), consumption is a better indicator of well-being for the following reasons. First, consumption is a better indicator of well-being due to the question of access, and availability of goods and services apart from the issue of income needed to get

those goods and services. Second, consumption may be measured better than income. This is especially true in cases of poor agrarian economies, where there is frequent income fluctuation according to harvest cycle and the inconsistent flows of income as a result of large informal sectors in urban economies of the developing countries. Consumption or expenditure may also better reflect households" actual standard of living and ability to meet basic needs. Thus, consumption expenditures indicate not only possessing of goods and services but also access to credit markets and savings in times of lower or even negative income level.

According to Mekonnen (2002), "the relative merits of using one method of measuring the poverty-lines over the others and the vice versa are still debatable." Each has its own strengths and weaknesses. Some argue that the poverty of the third world cannot be studied based on subjective criterion: since the very low level of income and the subsistence nature of economies made inaccurate results of such a measurement. On the other hand, others argue that poverty cannot be meaningfully quantified in excessively narrow and lean (slant) objective criteria." The fact that the concept, definition and setting of poverty lines are controversial, which invites one to look deep into how one can measure poverty. After measuring the poverty line the next step is setting the poverty line (Ibid, 2002). Greer and Thorbecke (1986) as cited in Getachew (2009) proposed a method competing the food poverty line at which a person's food energy intake is just sufficient to satisfy a given required quantity of his/her daily calories.

2.2.2. Cost of Basic Needs (CBN) Approach

To implement the CBN method Ravallion and Bidani (1994) employed two stages: The first stage relates to determining the food consumption bundle just adequate to meet the required food energy requirements; while the second stage focuses on adding to the cost of an allowance for non-food needs. The food consumed is then valued at the prevailing price to obtain the food poverty line. The allowance for basic non-food consumption is again anchored on the consumption pattern of the poor. Two problems may arise. One problem relates to variation in estimating food components (minimum required nutrition level) across regions and ethnic groups, while the second problem may relate to estimating the non-food components of the poverty line since there are no objective criteria on which to base the satisfaction. In any case, the basic needs approach is the most widely used approach for setting poverty line in developed countries.

2.3. Indicators and Indices of Poverty

There is no single measure of poverty; and all choices have their own pros and cons. The presence of a lot of instruments though each with some drawbacks, nevertheless, helps us to see the type and extent of poverty in given society. Generally, the measurement of poverty is said to consist of three phases. In the first phase, a choice of appropriate well-being indicator is made. In the second phase, the poor are identified from the population; and the third phase is concerned with the derivation of poverty indices using the available information. Concepts of poverty thresholds and lines have a long history extending back into and beyond the poor Laws in England. Despite their long history of operation, the methodology is still deeply flawed for analysis and the design of antipoverty policy interventions (Saith, 2005).

Poverty indices: is an indication of the standard of living in a country developed by the united nation (UN) to complement the human development index (HDI) and was first reported as the part of the human development report in 1997. In 2010 it was supplanted by the UN‟s multi-dimensional poverty index.

There are various types of poverty indices. However, the most commonly known ones are head count index (P_o), poverty gap/depth index (P_1), and the severity index (P_2) (Getachew, 2009).

2.3.1. The Head count index (P_0)

This index tells us the proportion of population, whose consumption expenditure falls below the predetermined poverty line. In other words, head count index is the proportion of the population whose measured standard of living (consumption) is less than the poverty line.

While P_0 has an advantage of simple calculation it suffers from two problems: That is the head count index does not reveal how worse the poor; will be poorer; with a reduction in the incomes of the poor; and it does not in any case depict distribution of income among the poor (Abbi and Andrew, 2003).

P_o= q/N-- (1)

Where; q is the number of people earning income below the poverty line; and N the total number of people in the population.

2.3.2. The Poverty gap/depth index (P1)

This measures how far an individual's income falls short from the poverty line. It is the difference between the poverty line and the mean income of the poor expressed as a ratio of the poverty line. Since this index is based on the aggregate poverty definition of the poor relative to the poverty line, it is by far better than head count index. Mathematically, P_1 can be depicted as follows:

$$P_1 = 1/N \sum_{i=1}^{q} (Z-Y_i)$$

Where; P_1 = Poverty gap
Y_i = Consumption expenditure or income of the poor
Z = Poverty line

Although this model measures the depth of poverty better than P0, it is insensitive to the number of individuals below the poverty line, and to the transfer of income among the poor (World Bank, 1983).

2.3.3. The Severity index (P2)

The severity index, which is also called "the Foster-Greer-Thorbecke Index", measures severity of poverty by squaring and averaging the gap between the income of the poor and poverty line. It is given by the formulae.

$$P_2 = 1/N \sum_{i=1}^{q} ((Z-Y_i/Z)^2)$$

Where, P_2 = severity index;
X_i = income or consumption expenditure of household;
Z = the poverty line;
N = size of the population; and

q = the number of the poor.

This measure has clear advantages, such as comparing policies which are aiming to reach the poorest; and the measures can be thought of as the sum of two components: This includes an amount due to the poverty gap; and an amount due to the inequality amongst the poor. P0, P2, and P2 tell the incidence, depth and severity of poverty among individuals, respectively.P2

changes in accordance with α; and it measures the mean of squared proportional poverty gaps. It gives more weight to the poverty of the poorest by squaring and averaging the gap.

2.4.   Equivalence scale for Normalizing Differences in household Composition

Equivalence scale is an important aspect of comparing living standards across households.

Households differ in size and consumption; compositions of simple aggregate households" consumption, though this could be quite misleading to understand about the wellbeing of individual member of a given household. As a result most analysis recognizes this problem; and use some form of normalization "consumption per adult male equivalent". For a household of any given size and demographic composition (such as one male adult, one female adult, two children) an equivalence scale measures the number of adult males which that household is deemed to be equivalent (Ravallion,1992 as cited in Getachew, 2009).

2.5.   Empirical evidence

Poverty has many causes, though some differences exist according to the countries circumstances; and many scholars agree upon the major causes of world poverty. For example, Ebdon (1995) outlined the primary causes, including: over population, the unequal distribution of resources in the world economy, inability to meet unequal standard of living and cost of living, inadequate education and employment opportunities, environmental degradation, certain economic and demographic trends, and inadequate income, and welfare incentives.

It is true that urban areas are hopes of life for they are centers of relatively better wealth, income, commerce, trade; and above all, they are sources of luxury. On the contrary, urban areas are also challenges to many. One of the many challenges it faces is growing urban poverty. The crucial determinants of poverty among the majority of mega cities and big urban areas; and nowadays the problem facing even medium towns of the third world is low levels of physical and human capital, unequal distribution of productive assets, inadequate access to social services, high fertility especially amongst the urban poor, and urban development strategies which are biased against labor absorption (Oberia, 1993)

Abbi and Andrew (2003) analyzed the status of chronic poverty in urban Ethiopia. They conducted their study in three waves of panel data set on 1500 sample households collected through the Ethiopian Urban Household Surveys from 1994 to 1997. By making use of both

descriptive and econometric methods, their study results showed the extent of "chronic and transitory poverty" (temporary poverty) in urban Ethiopia; and identified the characteristics of the poor and determinants that explain this chronic and transitory poverty. The researchers also examined the robustness (strength) of the pattern and trends of poverty suggested by the quantitative evidence by linking the subjective evaluation of welfare changes by households between two time periods. They conducted the study in the capital city, Addis Ababa and other secondary cities, such as: Bahir Dar, Nazereth, Dire Dawa, Mekelle, Awassa, Jimma, and Dessie.

Abbi and Andrew (Ibid) also analyzed poverty trends between 1994 and 1997 in the average welfare of 1045 households (whereby 555 are the rejected cases) in the panel as measured by real total expenditure per adult equivalent. They used total household consumption expenditure as the best proxy for analysis because they found out that, in their survey, income has been reported by a much smaller number of households. The same researcher found out that during 1994-1997, median consumption expenditure per adult declined for the total sample from 100.46 Ethiopian Birr (ETB) to 73.4 Birr. This decline, according to their study, is evident in all regions; monotonic over the period, and particularly it is seen between1994 and 1995 Overall, their study result suggested that household welfare deteriorated in urban Ethiopia between the years 1994-1997(Ibid).

In the second and third waves of their study (1995 &1997), Abbi and Andrew asked households" questions related to changes in household income, expenditure, and living standards since 1994 interview. The three questions asked to households were: (a) how has the households" income changed since 1994 interview? (b) How have households expenditure on basic needs changed since 1994 interview? And (c) to what extent has the living standard of the households changed since 1994 interview? The responses to these questions, though individual perceptions vary, most of the responses match to that of the quantitative evidence on poverty transitions between the two periods.

In general, the same researchers" study confirms that 40 percent of the cases indicated a significant match between the changes depicted by the quantitative evidence which shows that the percentage of their income changes is close to the percentage changes on the people's standard of living. The study further revealed that the connection between the subjective evaluation responses based on income and standard of living in contrast to the expenditure. Over all, their findings showed an increase in the incidence of urban poverty. It is the type of

Poverty that result as a low income or low per capital income. Infect such household feed from hand to mouth, (no savings).

Tilman Bruk (2007) studied the determinants of poverty in Ukraine using probit regression model by estimating the household probability of either income or consumption poor. Ghazouani and Goaied (2001) undertook a study on the determinants of urban and rural poverty in Tunisia using logit and probit econometric models. The objective was to determine the potential factors of poverty and to evaluate their impact on the levels of the households" welfare. Ghazouani and Goaied used panel data that describe the statistical facts taken from a "survey on budget consumption of the households undertaken by Institute national de la statistique (INS). The results of this study show that, in both rural and urban areas, the main factors which discriminate against poverty include household head's education, child dependency ratio, ratio of male and female employees in the household, socio-professional category of the head, and family residence. The result of the same study show that, the more educated the household head is, and a greater ratio of male and female employees in the household; and an increase in the number of children in secondary education reduces the likelihood of poverty.

Furthermore, the study results indicated that the economic disadvantage of female headship is mainly an urban phenomenon, where female headed household is significantly associated with a higher level of poverty.

Gender and poverty:

There is a limited consideration of gender issues with respect to measuring urban poverty, and in identifying the urban poor. This has implications for the formation of policy and in the design of anti-poverty programs (Getachew, 2009).

Consideration of urban poverty often neglects differentials between men and women in terms of their access to income, resources and services. Such differentials may occur within households between men and women or between individuals (i.e. between single man and single woman) or between households with women-headed households. There are also gender-based differentials in vulnerability to illness and violence (Shewaye, 2002 and Mekonnen, 2002).

Garza (2001) examined the determinants of poverty in Mexico. The data used in the study came from the 1996 national survey of income and expenditure of households. A Logistic regression was applied based on the data with the probability of a household being extremely poor as the dependent variable and a set of economic and demographic variables as the explanatory variables. The results of the Logistic regression show that, there is no evidence that female-headed households are more likely to be poor than male-headed households.

These studies are not in conformity with the previous study results. Hence previous study findings of case in this point will suffice to take the works of Shewaye (2002) and Mekonnen(2002) in which female-headed households are found to be the most affected and vulnerable groups in experiencing hard core urban poverty.

Marital status and poverty

In poverty determinant analysis, marital status of the household head is an important constituent of the demographic variables. Economic theory and most empirical literatures support the notion that the chance of falling into poverty increases as one is married. This is because when people get married household size will often increase as new children are born and expenditures increase which in turn leads to searching for mechanisms of fulfilling additional needs and necessities for the family (Saith, 2005).

On the basis of Getachew′s argument (2009), the probability of falling in to poverty increases as one gets married. The problem of food insecurity in the country is deep-rooted and the main reasons include: the lack of industriousness, weak market linkages, lack of developmental good governance, poor dietary habits, inappropriate attitudes to work, inadequate provision of social support, and limited use of family planning services. (Urban food security strategy, 2015). This argument is based on the rational that as an individual gets married; then the members of families will increase due to new births, causing the families′ expenditure needs to rise.

On the other extreme, if an unmarried individual has enough income, and can properly manage it, his/her accumulated capital becomes larger; and he/ she might have the probability to get out of poverty. However, due to the indivisible nature of some consumption goods (such as: television, water, electricity, etc.), the current consumption expenditure becomes high and results in fewer savings. Hence, this might lead to poverty mainly at an old age. In case of widows and divorces, different reasons are repeatedly reported; i.e., widows and

divorced household heads sell their valuables and productive assets to solve their family members facing acute problems such as food shortages, unable to settle education fee, health care and other expenses; and this rise in family expenditures lead the household heads′probability of falling in to poverty (Ibid, 2009).

Unlike the above argument, as one is married the probability of falling in to poverty trap decreases due to the presence of additional labor force that generated additional income with economies of scale. Some consumption goods like: house light expense, TV set and other expenditures are indivisible in nature; and there should be variation in the expenditure whether a person is married or not. This premises lead to conclude that, marriage help to escape out of poverty (Ravallion, 1994).

Age and poverty:

Mekonnen (2002) undertake the determinates and dynamics of urban poverty in Ethiopia by using data on a panel of households drawn from the Ethiopian urban socio-economic survey conducted by the Economics Department of Addis Ababa University. The study used multivariate regression model to capture factors that determine changes in the standard of living and mobility of households in and out of poverty from the panel data. He employed total household expenditure per adult equivalent as the dependent variable in the model with the exogenously predetermined household characteristics as the explanatory variables.

Grootaert (1997) in Garza (2001) studied the determinants of poverty in Cote d'Ivore by using probit model. He used the data from Cote d'Ivore living standards survey, which was conducted annually from 1985 to 1988 for analysis. He estimated the probit model for both urban and rural areas separately. Both researchers (Mekonnen and Grootaert) found out that the probability to be poor decreases as the age of the household head increases.

2.5.1. Household Size and Poverty:

Large households tend to associate with poverty (World Bank, 2000; Lanjaw and Ravallion, 1994). The effect of household size on household well- being very much depends upon the degree of rivalry in consumption among household members. All consumption in the family is probabilistic; so that every marginal increase in consumption increases the benefits of all household members; but, decreases the amount of saving in the household. Empirical literatures suggest that, there is a negative correlation between household's size and poverty.

For instance, Djavad Salehi-Isfahanicite in Yared (2005) for Iran concludes that households with larger number of family members tend to be poor. Likewise, Grootart (1997) for Cote d' Ivor; Garza (2001) for Mexico, also reached at similar conclusions.

2.5.2. Education and Poverty:

Education has been taken as one of the poverty reduction/alleviation measures through the use of human development indicator; and is used to differentiate countries development level.

Countries which have better educational attainment considered to be in a better development status than countries that have more illiterate citizens. Education impacts poverty in different ways. When an individual gets better educational attainment, his productivity, skill, bargaining power and competitiveness in the labor market as well as in the social set up become higher. This in turn helps households to earn more income, and reduces the probability to be impoverished (Getachew, 2009).

It is found out that poverty incidence, depth and severity decreases with increases in the level of education (schooling) of the head of the household. In urban areas, female headed households have been found to have higher poverty incidence, depth and severity than their male counter parts (MoFED, 2002).

2.5.3. Unemployment and Poverty:

The 1994 population census, estimated the rate of the overall unemployment in urban Ethiopia to be 22 percent in the age brackets 15-39 for which concentration of labor force is believed to be the highest. This accounts for the highest shares of serious social problems with their consequences, such as: juvenile delinquency, increasing crime, violence, higher number of street children and homeless people and become common features in many intermediate and bigger urban areas of Ethiopia. A study made by Dessalegn and Aklilu (2002) in urban Ethiopia witnessed the problem of unemployment to increase in the near foreseeable future. Their study revealed the depressing vision in that the prospects for economic growth and improvements in the labor market are very poor. Furthermore, the study results of the same authors revealed that, the issue of job insecurity is high in urban Ethiopia.

The unemployment rate in urban Ethiopia includes a large section of well-educated persons. This includes most young adults who complete 10 or 12 years of schooling; but, not fail to pursue their studies further becoming automatically unemployed. In any given year, there isaround 190,000 of them a figure rising over time Abbi and Andrew (2003). With regard to the correlates of employment to urban poverty, Abbi and Andrew (2003) and Mekonnen (2002) found that, there is a negative and significant relationship between employment level of the household head and incidence of poverty.

2.5.4. Household house tenure:

Lack of access to secure and safe housing is a central feature of urban poverty. Housing is also an important productive asset since access to credit to secure a livelihood may depend on property ownership. The price and availability of land for housing influence on housing tenure and conditions which lead to the development of illegal or informal land markets for those poor who have limited capacity to pay, even though quantity, accessibility and tenure of housing are all important (Rajal Masika,1997).

2.5.5. Energy and poverty:

Access to electricity does not depend on the level of income. Rather it is mostly an issue of overall availability. There is a striking difference in the percentage of the population with access to electricity as a lighting source across the urban spectrum. Access to share electricity connections appear to be the norm in major towns and Addis Ababa, where virtually the entire population is covered by the grid. However, the escalation of the present tariff for electricity made households to shift from using the same energy for cooking to buying of charcoal (Shewaye, 2002).

According to Shewaye, this has, at least, brought two visible consequences. Firstly, the price of wood gets high in which the poor could not afford to buy. Secondly, it leads to the indiscriminate cutting-off trees to sale for the purpose of fuel wood. This has again a bad consequence to the sustenance of nature and will have direct/indirect effects to the well-being of the country as a whole. The issue of housing tenure has become a cross-cutting agenda of urban dwellers; and this is assumed to be used as one of the indicators of urban poverty. The numbers of house owners are believed to be small. This is particularly true in the capital city of Addis Ababa, and other secondary cities in the country. This is also getting attention inother medium towns of Ethiopia (Shewaye, 2002).

2.5.6. Health and poverty:

Health, without doubt, is a fundamental element in assessing the extent to which urban poverty prevails; simply because in the absence of proper health, the working force whether professionals, skilled or trained ones cannot have the capability to do jobs effectively and efficiently. Efficiency of workers considerably depends on their health. Workers whose health is not good and who fall sick quite often cannot do their job effectively and efficiently; and thus, their effectiveness and efficiency is bound to remain low (Somashakar, 2003).

According to the World Development Report (WD, 1993) as cited in Somashaker (2003), health plays immense contributions in reducing poverty. According to the same report, improved health contributes to economic growth in particular in the following four ways:

I.   It reduces production losses caused by workers illness;
II. It permits the use of natural resources that had been totally or nearly inaccessible because of various diseases;
III. It increases the enrollment of children in schools, and makes them better able to learn; and
IV. It makes free for alternative uses of resources that would otherwise have to be spent on treating illness.
V.   The economic gains are relatively greater for poor people, who are typically handicapped by ill health, and who stand to gain the most from the development of underutilized natural resources, balanced nutrition and medical care. Improvements in the health of the population would contribute to increase their productive capacity, and leads to qualitative improvement in human capital. This, indeed, will have a gradual positive effect on reducing poverty.

Poverty very much relates with the health of households. Poor households are likely to be affected by any disease because they cannot afford the cost of high vitamins, and nutritionally rich food items. Low sanitation in their living environment also contributes its part.

Moreover, when one member of the poor family become sick, poor economic capacity of poor households hinders providing medical care for the sick and the disease becomes transmitted to all household members (Getachew, 2009).

2.5.7. Income and Poverty:

Urban poverty could also be determined by the income of individual. In Ethiopia, historical evidence shows that in most cases, the family depends on a single breadwinner. This single breadwinner, usually, does not have the capacity to fulfill the need and interest of the whole family, particularly those families composed of under age children, youngsters, the old aged ones, and the extended families. This would have a negative impact on the family to face continuing vulnerable life. Lack of access to skill development and upgrading of workers have a negative effect on income of an individual. Since urban life is a function of monetized economy, absence/presence of sustained family income plays a direct and great effect on urban poverty (Mekonnen, 2002).

Using a panel data Yonas A. et al (2012) analyzed the correlates of subjective and ordinary poverty in urban Ethiopia with the main emphasis on individuals' perception of poverty on themselves. They found that households with a history of past poverty continue to perceive themselves as poor even if their material consumption improves.

The researcher believes since this paper will examine the determinants of urban poverty in the case study area via inclusion of wide range of variables and a survey data of 123 households collected from sample urban areas from the Kirkos sub city, it will give a room for policy makers and development partners of the country to intervene in many aspects based on reliable findings to reduce urban poverty in the Kirkos sub city.

2.6. Model variables and Hypothesis

In this study, two main variables will be explored: the dependent (regressed) and independent (explanatory) variables. The regressed variable is urban poverty; and that of the independent/ explanatory variables are the determinants of urban poverty, which are thought to have significant role in determining urban poverty in Kirkos sub city. It is to be noted that a number of explanatory variables could influence the incidence of urban poverty directly or indirectly, as a result. Only few variables, which are believed to play dominant roles, were analyzed. One should also make sure that the regressed or regressor variable(s) could be the cause and effect of the other. In this study, it is assumed that regressors (determinants) come first and the regressed (urban Poverty) comes next. The following section gives highlights to the selected determinants of urban poverty and casts some hypothesis.

Urbanization and Poverty: Nowadays the rapidly growing urban population of developing nations poses unprecedented challenges for the national and municipal policymakers. Urban areas **in** Ethiopia are **in** a state of expansion without the necessary preconditions and this is paving the way for visible urban poverty. There is indeed ample evidence that urban areas are unable to cope with the increasing population, and delivery of services has deteriorated markedly over the years. Access to housing, health, and education services continues to be seriously limited. Basic sanitary conditions are atrocious by any standard. Transportation facility, energy availability and access to job, labor market, skill reproduction work, entitlements and finance are also at their lowest level (Oessalegn and Aklilu. 2002).

The exodus rural-urban migration either by pull or push economic or social factors play pivotal roles in the escalation of urban poverty in Ethiopia. This migration coupled with the natural increase in population within the urban area has started to impose a pervasive challenge to the commendable development of the urban centers. The urban population in Ethiopia is growing at a rate of around 6 percent per year (EEA/EEPRI. *2004/05).* In 1994 for instance the proportion of the urban population was 13.7 percent, which increased to 15.5 percent in 2003 and more than 16 percent presently. This figure could go up to17.5 **and** 29.7 percent in 20 15 and 2030 respectively (CSA .2003).

RESEARCH METHODOLOGY

3.1. The study area

Addis Ababa, the largest urban center in Ethiopia was found by Emperor Minilik…concerned key informants, such as kebele, wereda, sub city and city administrative official. Kirkos sub-city is one of the ten sub-cities of Addis Ababa, Ethiopia. As shown in Fig. 1, Kirkos sub-city is located at the center of Addis Ababa. National sport and cultural facilities such as Addis Ababa stadium and Meskel square are located in the sub-city. The sub-city hosts international offices such as the office for Organization for African Union (OAU) and the United Nations Economic Commission for Africa (ECA).
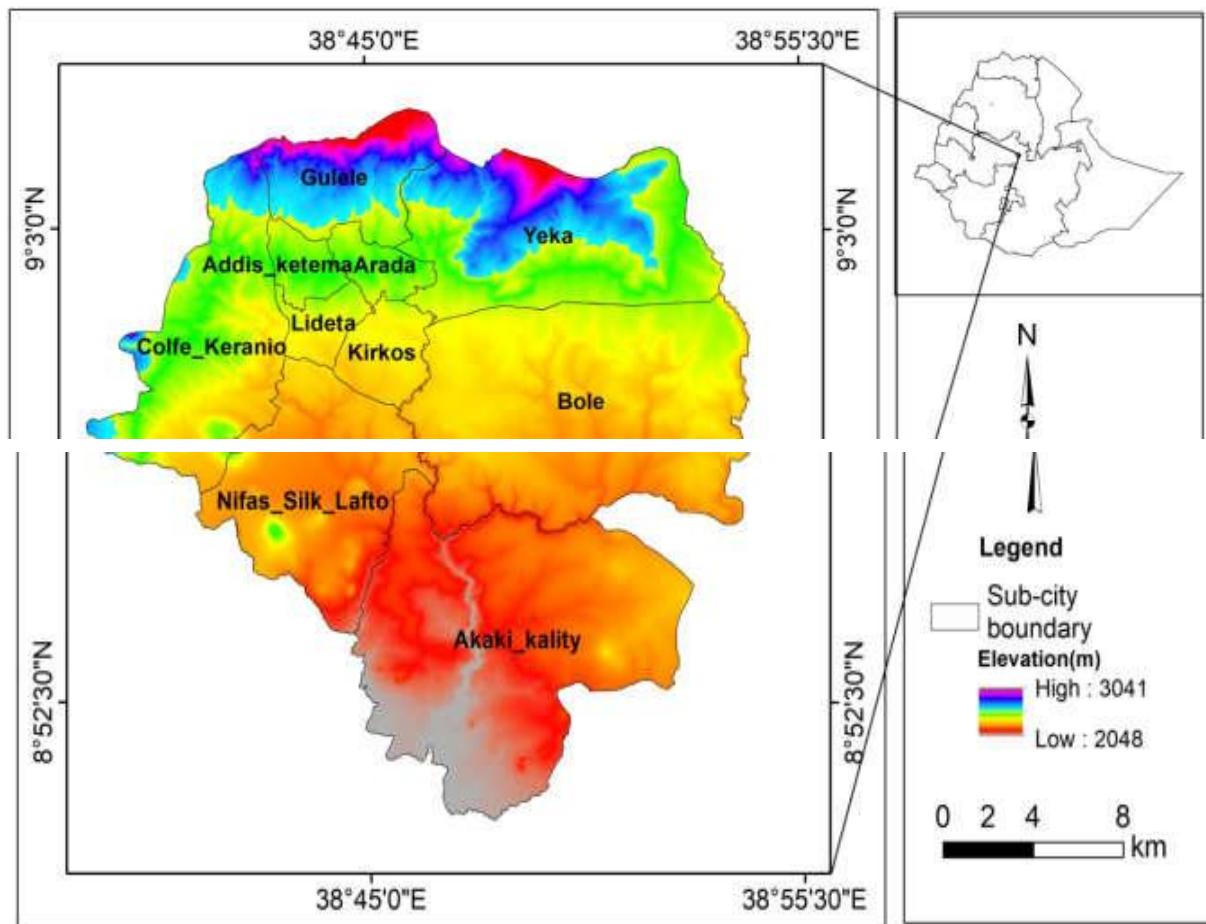
Fig. 1 Study area.a Addis Ababa sub-city boundaries, b building and road network in Kirkos

Kirkos sub city is one of ten sub cities of the district is located in the city center, and borders with the districts of Arada, Yeka, Bole, Nifas silk. Kirkos sub-city covers a surface area of 1,472 ha and has a population size of about 235,441. Male 110,069. Female 125,372 (Central statistical agency of Ethiopia 2007). The sub-city is one of the densely populated sub-cities in Addis Ababa with a population density of 150 persons per hectare. Kirkos sub-city is characterized by a combination of modern buildings and old residential settlements. Also as shown in Fig. 1 the sub-city is characterized by dense built-up areas. Superficial observations of Kirkos's residential areas suggest that it is inhabited by residents with high difference in income. The sub-city has 11 Kebeles, which constitute the smallest administrative levels in Ethiopia Population densityper. sq.m 16,104.

3.2. Data types and sources

All the necessary data required for the study would be obtained from both primary and secondary sources by using multiple tools of data collection. Both primary, secondary data and even personal observation was used to carry out the study. As part of the primary data collection effort, the sample based household level data collection work was undertaken using pre-prepared structured questionnaire. At individual level, the selected sample household heads were asked (interviewed) about their respective sex, age, marital status, health condition, and education levels. Moreover, at sample household level, information collection included average monthly household income and expenditure, family size, housing condition, type of tenure, source of drinking water, types of kitchen, toilet, lighting, fuel types and sources used for cooking, and whether or not each household had a fixed telephone connection and mobile phone, a radio and a TV set. Pertinent documents for the study: including published and unpublished books, statistics, and figures were utilized/reviewed. That is, relevant literature (including previous studies), are reviewed consisting the issues under consideration. Secondary source were written documents from the previous working literatures, statistical facts and figures. Having this two source the writer will draw conclusion with observation and experience. The questions from the structured questionnaires were posed to the sample heads of households to collect appropriate data. Hence, the collected data was processed/ analyzed and interpreted using appropriate statistical methodologies and presentation techniques.

3.3. Hypothesis

In this study, two main variables will be explored: the dependent (regressed) and independent (explanatory) variables. The regressed variable is poor and non-poor; and that of the independent/ explanatory variables are the determinants of urban poverty, which are thought to have significant role in determining urban poverty in Kirkos Sub City.

Household Head Education (hhed): The higher the level of education of the household head, the higher the household's income will be. If the highest attainment is in primary education level, it takes the value of 1, 0 otherwise. Higher educational attainment by the household head could lead to awareness of the possible income generating sources, increase efficiency to perform the activity; and hence, increased income. Generally, if the heads highest educational level is less than or equal to primary school complete, it takes the value of 1, 0 otherwise.

Household Head Income (hhi): The amount of household income at any one time shows the extent of poverty; or household's economic status. Economic theory tells that a household with a relatively better income will lead a decent life; and hence, reduces the incidence of poverty. In this study, a household with monthly income of less than or equal to 800 Birr (closer to 1 USD per day per adult as an international poverty line) is assumed to be poor and takes 1, 0 otherwise. It is expected that increased households" income decreases urban poverty.

Household Head education status (hhes): It is expected that households, where the head of the household have no education would be worse than households where the parents are educated. This is a test for whether he/she lacks of education from generation to generation. The study assumes household heads, that are not educated at all and those that have not completed grade eight as poor (1); and those above grade eight as non-poor (0).

Household Family Size (hhfs): It is hypothesized that households with large family size are less likely to escape poverty. The assumption is that household heads of married families are supposed to be larger in family size. Large families in developed countries mean large labor force which in turn reduces the incidence of poverty. But, in developing countries, households with larger family sizes are associated with high incidence of poverty because many of the labor force are unemployed. Therefore, in this study (in kirkos sub city), the

researcher expects that households with larger family sizes are likely to be poorer than those with less family sizes.

Household Head Age (hha): It is hypothesized that, household heads in the age ranges of 20-60 are the productive ones whereby the probability of getting income is higher; while the rest of the household heads are assumed to be poor. Life cycle hypothesis says that income of the household is low at the younger age (below 20 years); but, high in adult age, and decreases in the old age (above 60 years), (http//ww.investopodia.com/terms/life cycle hypothesis.asp). Empirically, Gaza (2001) found that there is a negative and significant relationship between the age of the household and the incidence of poverty. If the age of the household is below 20 or above 60 years, give 1, 0 otherwise.

Household Head Sex (hhs): The female headed the households are, the lower their incomes than male-headed households. Due to different social and cultural reasons, female headed households find it more difficult than men headed households to get access to various resources, including job opportunities. If the head of the household is female, it takes the value of 1, 0 otherwise.

Household Health (hhh): Households with members that frequently get sick are hypothetically exposed to poverty. Lack of proper health services will make people to become weak and unproductive. Households with frequent patient members take a value of 1, 0 otherwise.

Household Water Ownership (hhw): It is hypothesized that, the probability of households to be poor is low if they have private tap water 0r others in their compound. Those who don't have private tap water in their compound take the value of 1, 0 otherwise. It is hypothesized in this study that the probability for a household to be poor is low if they have private tap water in their compound.

Ownership of a house (ooh): The probability of households to fall into poverty trap decreases as they possess their own houses and increases as they don't. It is hypothesized that households without their own house take the value of 1, 0 otherwise.

3.4. Data collection methods and procedures

Sample design and size:A Survey research design in which cross sectional research was used since it measures the current assess of urban poverty and coping strategies of urban household to urban life in the town. The sampling technique used was a random sampling technique so that each household would have equal chance to be selected. The sample frame was the registered household list collected through census by support of Central Statistical Authority and the list was updated whenever new household come to the town as a resident and seeks to obtain any service. The questionnaire were first prepared in English and then translated into *Amharic*. The *Amharic* version questionnaire was pre-tested on respondents in similar communities. This was done purposely for clarity, acceptability, flow and reduction of repetition. Based on this, minor modifications were made and survey was undertaken. So, from the total population of the town 123 sample size was determined using mathematical formula developed by YaroYameni Formula where sample size "S" is

$S = N/1+ (e)^2$ Where

N = total household population = 235,441. Male 110,069. Female 125,372 (Central statistical agency of Ethiopia 2007). Assuming that 2.8% population growth reat total household size in the study area will be 337,126.

I = a constant

E = allowable error 9/100 (9%) = 0.09

$S = N/1+N (e)^2$

S= 337,126/1+337,126 (0.09)2

S= 337,126/1+337,126 (0.0081)

S= 337,126/1+252.1

S= 337,126/253.1

S= 123.39 ≈ 123

Based on covid 19 to select very poor community Kirkos sub city administration food bank in the five levels the first level more than 31,000 which is under poverty level.

The researcher took 3 sample wereda from a total of 11 wereda of kirkos sub city. This study used a cross-sectional survey to assess the determinants of urban poverty in Kirkos sub city. In addition, both stratified and systematic random sampling techniques were employed to conduct for the study.

3.5. Method of data analysis

3.5.1. Descriptive analysis

To explain the situation of demographic and socioeconomic variables of the households descriptive analysis are made. The analysis was used to assess the overall livelihood of the population in the city. The specific method of data analysis involved includes tabulation and cross tabulation, frequency, percentages, and computation of descriptive statistics, such as mean. To support the analysis, different tables, graphs, and figures are used.

3.5.2. Econometric analysis

In this article, the poverty status of a household is estimated using regression analysis. The aim of such an analysis is to determine which factors cause the dependent variable, namely poverty level of household. Binary logistic regression is used in poverty studies to predict dichotomous outcomes. Here, a poverty line was used to determine a household's poverty status: households that fell below a certain predetermined level of income were considered poor, whilst households that earned above these predetermined levels of income were considered non-poor. In the absence of an invariably acceptable national poverty line for Ethiopia, we decided to use the official poverty line constructed by MoFED in 2010/2011. That is, a household is deemed as living in poverty if the per capita consumption is less than equal Birr 3781 otherwise the household will be considered as non-poor. This is equivalent to ETB10.50 per day. Poverty level is regarded as a qualitative regress and, i.e. a person is either poor or non-poor. The variable can take only two values: 1 if the person is poor and 0 if not. As already indicated, the dependent variable is binary in nature, as a result a logistic model was used since it is deemed the most appropriate for this type of analysis.

To measure poverty and identify the poor from the non-poor, empirical models were utilized.

The models that are used for the study are indicated below.

Foster Greer Thorbeek (1986), food energy intake approach (FEI) and cost of basic needs approach (CBN) are used to determine absolute poverty line of the households. Food energy intake method can be done using regression in which dependent variable can be consumption expenditure or income and the independent variable is calorie intake. However, this method is considered as food poverty line.

Cost of basic needs (CBN) method is a continuation of FEI method that can be determined by giving some alliance to non-food items. CBN approach explain urban poverty as is not only related with food poverty; but, also includes non-food items, like: housing rent, education fee, transportation, sanitation fee, power consumption fee, water charges, etc. which show monetized characteristics of urban economy.

To determine food poverty line, the regression model used to estimate the parameter is

$$lnX_j = a + bc_j \text{-- (1)}$$

Where, Xj = Total value of food consumed per adult equivalent units by household jCj = Total consumption per adult equivalent by household ja and b are parameters to be estimated

The food poverty line Zf is the estimated cost of acquiring the calorie recommended daily alliance:

$$Zf = e\,(a + bR)\text{-- (2)}$$

Where, Zf = food poverty line

R = Recommended daily alliance of calories per adult equivalent, which is 2200 for urban consumption per adult person.

The steps that could be considered to estimate the above (1) and (2) or FEI poverty line is based on Greer and Thorbeck as cited by Getachew (2009).The details are shown below.

(a) Total value of food (X*j) consumed by each household, which is equal to the sum of the value of purchased food (V*j) and the value of own production consumed (K*j), was determined; hence

$$X^*j = \sum Di + K^*j \text{-- (1)}$$

The value of purchased food consumed $V\,j^*$ by each household was established by multiplying the quantities of different food types purchased (Di) by the prices per unit (Pi).

$$V\,j^* = \sum Di\,_j + Pi\,_j \text{--- (2)}$$

Vj^* = value of purchased food consumed by the jth household

Dij = the quantity of ith food items purchased by jth household

Pij = the local price paid by the jth household for the ith food item

The value of own output or donated food consumed by the household Kj^* is the product of own production (including donations) (Mij) and the local prices (Pij). The quantity Mi is the imputed value of consumption.

$$Kj^* = \sum V^*j\; MijPij \text{--- (3)}$$

(b) The adult equivalent Hj for each household was peroxide by the household size.

(c) Total value of food consumed per adult equivalent was derived by dividing the total value of food by household adult equivalent:

$$X_j = \frac{X^*_j}{H_j} \text{ --- (4)}$$

X_j^* = total value of food consumed by *jth* household

H_j = adult equivalent for *jth* household

X_j = total value of food consumed per adult equivalent units

(d) The different types and quantities of foods consumed by the different households were converted to calories C_j using the calorie equivalents

(e) A regression model was fitted to estimate parameters to be used in determining food poverty lines:

$$\text{In } X_j = a + bC_j \text{ --- (5)}$$

Where: X_j = total food expenditure per adult equivalent by household j

C_j = total calorie consumption per adult equivalent by household j a and b are parameters to be estimated. (f) The various measures of poverty ($P\alpha$) were computed using the following formula:

$$(P\alpha) = 1/n \sum_{i=1}^{q}(z - Y_i/Z)\,\alpha \text{--}$$
(6)

Where: Z = food poverty line

y_i = per capita food expenditure for ith household (i = 1, 2,..., q) living below the poverty line

q = number of households below the poverty line

n = total number of sampled households

α = 0, 1, 2

World Bank (1990) in its World Development Report noted that most developing countries set their poverty lines at $1 a day. In line with this, a household who receives US $1 and

above per day per person adjusted for a household size is regarded as non-poor; and those below that level of income are in absolute poverty.

The simplest measure of the incidence of poverty is the proportion of households that fall below the food poverty line or the head-count index (Po). This is equal to the number of households falling below the poverty line divided by the total number of households.

The poverty-gap index (P1) captures the total proportional shortfall or depth of poverty (i.e., the difference between per capita food expenditures and the food poverty line and then divided by the food poverty line). If we simply add up the difference between the expenditure measure and the poverty line for all those who are below, we have the total money required to eliminate poverty.

The degree of inequality (distribution) is captured by the Foster–Greer–Thorbeck index (*P2*).

A particular strength of the *Pα* indicators is that they are decomposable. That is, indicators for the whole kirkos city can be calculated as a population weighted average of the indicators for each wereda.

Poverty Indexes

Kimalu et al., (2002) pointed out that one poverty measure that has been found manageable in presenting information on the poor in an operationally convenient manner is the FGT (Foster, Greer and Thorbecke) measure developed by Foster et al., (1984). This measure is used to quantify the three well-known elements of poverty: the level, depth and severity (also known, respectively as incidence, inequality and intensity) of poverty.

Mathematically

$$P_{\alpha=}\frac{1}{N}\sum_{i=0}^{n}(\frac{Z^T-Yi}{Z^T})\alpha \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 1$$

Where α takes vales of 0 (poverty incidence), 1 (poverty gap) and 2 (severity of poverty). *N* stands for total sample size and *n* for poor households. Poverty indexes are solved using Distributive Analysis Distributive (DAD) software which is mainly designed for poverty and inequality analysis. Moreover, the software allows survey data to be weighted easily in case of oversampling of small populations and under sampling of large populations which are identified as common problems related to collection of survey data (WB, 2005).

Model specification

The econometric part of analysis uses a proxy variable showing whether a household is poor or not. This proxy variable (taking binary form) is assigned a value of 1 or 0 using the poverty line as a cutoff point. i.e.

$$y= 1 \text{ if } Y<Z$$
$$0 \text{ if } Y>Z$$

Where y is a categorical dependent variable, which stands for poverty status of the household with respect to Z,

Z is poverty line and Y is real adult equivalent consumption.

Having the above information, the choice is among the qualitative response models, i.e. linear probability model, logit model and probit model. The logit model is more preferable for this study due to the draw backs of LPM and the normality assumption of probit model which makes it difficult to test. So the model is highlighted below.

Logit model

Logistic regression is a special, simpler case of multinomial regression. The log it function is useful because it can take as an input any value from negative infinity to positive infinity, whereas the output is confined to values between 0 and 1. The variable z represents the exposure to some set of independent variables, while f (z) represents the probability of a particular outcome, given that set of explanatory variables. The variable z is a measure of the total contribution of all the independent variables used in the model and is known as the log it.

The variable z is usually defined as

$Z=\beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \beta 6X6 \ldots \beta kXk + \varepsilon$ ------------------- (1)

Where, β_0 is called the "intercept" and β_1, β_2, β_3, and so on, are called the "regression

coefficient " of x_1, x_2, $x_{3,x4, x5,}$ x6, x7, x8, x9,x10, respectively; and x_1, x_2, x_3 $_{x4, x5,}$ x6, x7, x8, x9,x10 are household head education, household head income, household head age, sex and dependency ratio, though there are un explained independent variables occupation, household head family size, household head age, household head health, household head water, and household head tenure respectively.

Aggregating the value yields

$$Z = \beta_0 + \sum_{k=1}^{K} \beta_k X_{k} + \varepsilon \text{ -- (2)}$$

In practice, Z is an observed; and (ε) is systematically distributed with zero mean and has cumulative distribution function (CDF) defined as F (ε). What we observe is a dummy variable z, a realization of a binomial process defined by:

$$Y = \{1 \text{ if } y>0,\ 0 \text{ otherwise}\} \text{ -- (3)}$$

From equation (2) leaving the constant term and rewriting the model yields

$$\text{Prob } (Z=1 = \text{prob } (\varepsilon > -\sum_{k=1}^{K} \beta_{k\ Xk)} = \text{prob } \sum_{k=1}^{K} \beta_{k\ Xk} + \varepsilon > 0$$

$$1 - F\ (\sum_{k=1}^{K} \beta_{k\ Xk)} \text{ --}$$
(4)

The logit model usually takes two forms, which may be expressed in terms of logit or in terms of probability. Specifically, the logit model is expressed as:

$$\text{Log } [p_{(y=1)/\ 1-(y=1)}] = \sum_{k=1}^{K} \beta_k X_k \text{ --- (5)}$$

Using equation 4 and 5, it can be transformed in to a specification of a logit model of event probability by replacing the general CDF, F with a specific CDF, L representing the logistic distribution.

$$\text{Prob}(y=1) = 1 - L\ [(\sum_{k=1}^{K} \beta_{k\ Xk}] = L[\sum_{k=1}^{K} \beta_k X_k\ ] = e^{\sum_{k=1}^{K} \beta_k X_{k}} / 1 + e^{\sum_{k=1}^{K} \beta_k X_k} \text{ -------------- (6)}$$

Equation (6) represents the probability of an event occurring.

$$\text{Prob}(y=0) = [-(\sum_{k=1}^{K} \beta_k X_k\ ] = L[\sum_{k=1}^{K} \beta_k X_k] = e^{\sum_{k=1}^{K} \beta_k X_{k}} / 1 + e^{\sum_{k=1}^{K} \beta_k X_k} \text{ --------------------}$$
(7)

For a nonevent, the probability is just one minus the event probability that is revealed in the equation (7).

In general, numerical methods are used to fit the parameters of logistic regression models. However, they may sometimes have difficulty in converging to a solution. Users should be alert to any warnings given by the stat software when problems occur with convergence, and resolved by simplifying the model.

CHAPTER FOUR

ANALYSIS RESULTS AND DISCUSSIONS

4.1. Introduction

Analysis of data collected from field survey involving sample households in Kirkos sub City and analysis results (findings) are discussed under this chapter in three sections. The first section deals with the derivation of food poverty and total poverty (food plus nonfood poverty) line head count, poverty gap, and poverty severity indexes derived based on food, food plus nonfood consumption and international poverty line of $1 a day measurement reference. The next section discusses the descriptive analysis, mainly focusing on the relation between poverty and other socio economic and demographic variables. The socio economic and demographic factors (determinants of poverty) include: household head education, household head income, household head age, sex and dependency ratio, occupation, household head, family size, household head age, household head health, household head water, and household head tenure, sick household member, employment status, asset ownership, and access to credit services. The most widely used method of estimating poverty line is the cost of basic needs method (WB, 2005) because the indicator will be more representative and the threshold will be consistent with real expenditure across time, space and groups. According to this approach, first the food poverty line is defined by choosing a bundle of food typically consumed by the poor. The quantity of the bundle of food is determined in such a way that the bundle supplies the predetermined level of minimum caloric requirement. It is at least 2,200 KCa intakes per day that will leave an individual not to be poor (MoFED, 2012). The bundle that gives 2,200KCa is valued at regional average prices to get a consistent poverty line across the region. Then a specific allowance for the non-food goods and services consistent with the spending of the poor is added to the food poverty line. The last section focuses on econometric/ regression analysis and the findings about determinant factors of poverty in Kirkos sub city.

4.2. Identifying the Poor

The food energy intake (FEI) approach is used in the identification of the poor from the non-poor. This is done based on a predetermined value expressed in terms of calorie intake equivalents. In this study cost of basic needs approach (CBN) that permits some allowance

for non-food items are employed. International poverty line of $1 a day per adult equivalent is also employed to measure poverty.

4.2.1. Food energy intake method (FEI)

This method employs regression of natural logarithm of expenditure as dependent, and daily calorie intake as independent variable to compute the food poverty line at which a person's food energy intake is just sufficient to satisfy a given required quantity of his or her daily calories.

Thus, the following is the regression model used to estimate the parameter:

$Y_j = a + bc_j$,

Where y_j = income or expenditure, and

Cj = daily calorie intake.

The regression result of Kirkos sub city householdṡ survey is shown below:

Table 1: Regression statistics for food poverty line of Kirkos sub city.

Multiple R	0.957753018								
R Square	0.917290844								
Adjusted R Square	0.91697516								
Standard Error	2.400121357								
Observations	264								
ANOVA									
	Df	*SS*	*MS*	*F*	*Significance F*				
Regression	1	16738.67828	16738.68	2905.727	8.1375E-144				
Residual	262	1509.272622	5.760583						
Total	263	18247.9509							
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*	
Intercept	0.086359215	0.29159207	0.296164	0.767339	-0.487802983	0.660521413	-0.487802983	0.660521413	
X Variable 1	0.001123262	9.21198E-05	53.90479	8.1E-144	0.004784308	0.005147086	0.004784308	0.005147086	
zf=e^(a+b)	A	B		bR	a+bR	Zf			
	(0.086359)	+0.001123		*2.471177	2.557536	12.90			

Where, zf = food poverty line

      a = intercept of the regression

      b = coefficient of calorie intake, and

      R = the standard calorie intake of person per day

Thus, from the above regression result $zf = e^{(0.086359215+.001123262*2200)}$

$$= 12.90$$

In kirkos sub city, people who obtain an income or with expenditure of below Birr 12.90 are considered below food poverty line (poor); and those obtained more than Birr 12.90 are categorized in the above food poverty line (not poor). The estimation of the poverty line is based on adult equivalent consumption; and thus, people who spend or with expenditure below Birr 12.90 per adult equivalent per day is food poor; while those who earn or spend above Birr 12.90 are non-food poor.

Table 2: Food poverty status of Kirkos sub city 3 werda 5 kebeles

Kebele	Poor	%	Not poor	%	Total Respondent	%
Werda 11 Kebele 30	6	8.45%	15	26.3%	24	19.5%
Werda 7 kebele 15	9	13.5%	12	21.05%	21	17.07%
Werda 11 kebele 23	8	11.24%	1o	17.5%	26	21.14%
Werda10 kebele 24	8	11.24%	13	22.8%	30	24.4%
Werda10 Kebele 13	15	22.7	7	12.28	22	18.
Grand Total	71	54%	52	46%	123	100.00%

Source: Author's field level survey of 2020.

As shown in Table 2 above, from the total population of the survey 54% of the sample households live below food poverty line; and the remaining 46% are above food poverty line. From all sample households of those 3 werda 5 kebeles of Kirkos sub city, Werda 10 Kebele 24 is reported to have the highest food insecure households that account 25.75%. The other kebeles such as, Werda 7 Kebele 15, Werda 11Kebele 23, Werda 10Kebele 13, and Werda 11Kebele 30 each accounts with 12.12 %, 11.4%, 10.61%, and, 8.71% food insecure households, respectively. In sum, Werda 10 Kebele 13 is found with the highest population facing the highest food shortfall, a kebele with many poor residents. Werda 11 Kebele 30 accounts for only 13.5% of food poverty groups, which is the least kebele to face food poverty problem.

4.2.2. Cost of basic needs approach (CBN) /Total poverty line:

People in urban areas are characterized by monetized economy. They do not only spend their money on food items; but also on clothing, education, health and other socio-economic activities. Therefore, computing poverty line that includes food and non-food spending (total poverty) is an inevitable approach to analyze poverty. To determine total poverty line, the food poverty line Birr 12.90, and some allowance for non-food items should be included. Revallion and Bidani (1994) introduced a better technique to calculate the total poverty line based on cost of basic needs approach. According to these authors, households usually spend on non-food goods as some non-food goods are similarly basic. Thus, similar to food poverty, total poverty line can be computed using the regression equation as indicated in the methodology part (chapter 3). The results of the regression analysis are presented in Table 3 below.

Table 3: Regression statistics for total poverty line of Kirkos sub city

RSquare	0.485913353							
Adjusted R Square	0.483951191							
Standard Error	0.106407175							
Observations	264							
ANOVA								
	Df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	2.803920073	2.80392	247.6417	9.84307E-40			
Residual	262	2.966491572	0.011322					
Total	263	5.770411646						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept A	0.786042466	0.02303674	25.43947	9.57E-73	0.540681749	0.6314031 8	0.540681749	0.63140 3183
X Variable 1	-0.045473392	0.002889651	- 15.736 6	9.84E-40	- 0.051163288	- 0.0397835	- 0.0511632 88	- 0.03978 3496

Source: Author's field level survey of 2020.

As revalion and Bidani (1994) suggested, the square value of log (Y_i/Z^f) allow a better fit to the data because it permits the income elasticity of demand for food to exceed unity of low value of y. Based on this principle the household survey data is regressed and provide the above parameter (α and β) results. Total poverty line Z is then determined as: $Z=z^f(2-\alpha)$

Where, Z = total poverty line

z^f = food poverty line and

α = parameter that is estimated from the above regression,

Thus from the above regression result we get:

Z = 12.90 (2- 0.786042)

= 15.66 Birr per day per adult equivalent.

In Kirkos sub city people who obtain an income or with expenditure of below Birr 15.66 are Categorized below total poverty line (poor); and those obtaining an income more than Birr 15.66 are categorized in the above poverty line based on adult equivalent consumption of basic needs. Hence, people who earn an income with expenditure below Birr 15.66 per adult equivalent per day are categorized as poor; and those who earn or spend above Birr 15.66 are categorized as non-poor.

Table 4: Total poverty status of Kirkos sub city by Kebele

Kebele	Poor	%	Non poor	%	Total Respondent	%
Werda 11 Kebele 30	17	18.1%	7	24.1%	24	19.5%
Werda 7 Keble 15	15	16%	6	20.7%	21	17.07%
Werda 11 kebele 23	21	22.3.%	5	17.4%	26	21.14%
Werda10 kebele 24	27	28.7%	3	10.34%	30	24.4%
Werda10 Kebele 13	14	14.9%	8	27.6%	22	18.
Grand Total	94	76.4%	29	23.6%	123	100.00%

Source: Author's field level survey of 2020.

As shown in Table 4 above, from the total sample households drawn in Kirkos sub city, the share of people living below total poverty line are 94 (76.4%); while 29 (23.6%) of the sample households live above poverty line with an income of Birr 15.66 per adult per day.

Even though the poverty line of Kirkos sub city is computed; and poor and non-poor are identified based on 12.90 Birr income per adult per day food poverty line; and 15.66 total poverty line, the researcher used the international poverty line of $1 a day to compare different population groups living below poverty line.

As shown in Table 5 below, the percentage of people living below poverty line based on one dollar a day principle is 82.95. This shows that the number of people earning below one dollar a day increases by 25.72% and 6.81% compared with food poverty line and total poverty line, respectively. The total poverty status of people in sample kebeles as shown in

Table 4 above shows slightly having different share for the whole city poverty status in that, Werda 7 Kebele 15 and Werda 10 Kebele 13 are the leading residence being as a home of poor people living below poverty line.

Table 5: One dollar a day poverty status of Kirkos sub city by Kebeles

Kebele	Poor	%	Non poor	%	Total Respondent	%
Werda 11 Kebele 30	20	19.6%	4	19.1%	24	19.5%
Werda 7 kebele 15	17	16.7%	4	19.1%	21	17.07%
Werda 11 kebele 23	21	20.6%	5	23.8%	26	21.14%
Werda10 kebele 24	26	25.5%	4	19.1%	30	24.4%
Werda10 Kebele 13	17	16.7%	5	23.8%	22	18.
Grand Total	102	82.9%	21	17.1%	123	100.00%

Source: Author's field level survey of 2020.

As noted earlier, 13 and 15 kebeles have less economic capability than the other selected sample kebeles. That is, 13 kebele could be taken as the home of daily labourers, guards, etc. where different business enterprises are also operating; while 15 Kebele is one of the homeless people's comparisons with the other four selected sample kebeles.

4.3. Poverty indices

Poverty measures such as head count index, poverty gap index and foster Greer Thorbeke index which is also called poverty severity index are the most frequently used measures of poverty. In the study, after the determination of food and total poverty lines, the poverty indices indicated are computed using the field survey household data. The results of the survey are presented in the following subsections.

4.3.1. Head count index (P0)

This index tells us the proportion of population, whose income or consumption expenditure falls below the predetermined poverty line. It is the share of the population who cannot afford

to buy or consume basic basket of goods. On the basis of the study findings (see table 6 below), the head count index for food poverty in Kirkos sub city is 0.572.

Table 6: Food poverty indices of Kirkos sub city

Kebele	P_0	P_1	P_2
Werda 11 Kebele 30	0.4423	0.1210	0.0456
Werda 7 kebele 15	0.5714	0.1615	0.0655
Werda 11 kebele 23	0.5926	0.1903	0.0864
Werda10 kebele 24	0.5385	0.1446	0.0514
Werda10 Kebele 13	0.7600	0.2136	0.0773
Grand Total	0.5723	0.1659	0.0653

Source: Author's field level survey of 2020.

4.3.2. Depth of poverty or poverty gap (P1)

This poverty measure captures the mean aggregate income or consumption shortfall relative to the poverty line across the whole population. It gives information about the households on how far they are from the poverty line. It is computed by adding all the shortfalls of the poor, and dividing the total by the total resource needed to bring all the poor to the level of the poverty line.

Thus, the poverty gap can be used as a measure of the minimum amount of resource necessary to eradicate poverty. In the case of Kirkos sub city, poverty gap index shows the amount that should be transferred to the poor with right targeting to bring all the poor out of poverty. That is, each poor should get exactly their income or expenditure shortfalls (the amount he/she needs) to be lifted out of poverty. The depth of poverty gap P_1 of Kirkos sub city is for food and food plus nonfood consumption are 0.1659, and 0.2571, respectively as shown in Tables 6 and 7. The amount of resources required to get people out of poverty in Kirkos sub city is 16.59% of food spending and 25.71% of food plus nonfood spending for food poverty and total poverty correspondingly. When the poverty gap index becomes higher, the amount of resources required to spend to the poor under proper targeting becomes higher.

The above results indicate that people living below poverty lines in Kirkos sub city have averagely a shortfall of resources about 16.59% for food, and 25.71% for food plus nonfood consumptions. The analyses of outputs in the respective kebele administrations provide the same information as explained above for the whole of Kirkos sub city.

Table 7: Total poverty indices of Kirkos sub city

Kebele	P_0	P_1	P_2
Werda 11 Kebele 30	0.6731	0.2015	0.0828
Werda 7 kebele 15	0.7857	0.2601	0.1127
Werda 11 kebele 23	0.7407	0.2745	0.1338
Werda10 kebele 24	0.7500	0.2313	0.0955
Werda10 Kebele 13	0.8600	0.3197	0.1392
Grand Total	0.7614	0.2571	0.1128

Source: Author's field level survey of 2020.

4.3.3 Poverty severity (squared severity gap) (P_2)

This measure reflects the sum of two components, an amount due to the poverty gap, and an amount due to inequality amongst the poor. That means the index undertakes both the distance separating the poor from the poverty line and the inequality among the poor. The value of this index is higher for households far away from the poverty line. In addition, the value p_2 for a specific kebeles indicates the severity of poverty for people living in a same kebeles is higher. Thus, the p_2 results of household level survey in Kirkos sub city are 0.0673 and 0.1177 for food and food plus nonfood consumption, respectively.

Table 8: Poverty indices of Kirkos sub city based on 1$ a day

Kebele	P_0	P_1	P_2
Werda 11 Kebele 30	0.8077	0.2665	0.1169
Werda 7 kebele 15	0.8571	0.3285	0.1537
Werda 11 kebele 23	0.8333	0.3342	0.1722
Werda10 kebele 24	0.7692	0.295	0.1335
Werda11 Kebele 13	0.8800	0.3864	0.1876
Grand Total	0.8295	0.3218	0.1527

Source: Author's field level survey of 2020.

In Kirkos sub city, the study results show that, the head count index for food poverty is 0.572; and the total poverty head count index is 0.7614 as shown in Tables 3 and 4, respectively. The international $1 a day head count index is 0.8295. These results imply that, the proportions of people that live below food poverty, total poverty and 1 $ day poverty lines are 57.23%, 76.14% and 82.95% of the total sample household respondents, respectively. The food energy intake or food poverty index tells that 57.2% the surveyed population cannot afford to buy or consume basic basket of goods. However, when the expenditure for nonfood goods, such as house rent, clothing, education and health expenditure, electric and water bill payments are added, the share of the population who are found below the total poverty line becomes 76.14%. This result assures that, high actual expenditure on spending of households in Kirkos sub city goes to nonfood consumptions particularly spending related to house rent, health and clothing. Expenditure for energy is reported to take great share of the household income. The analysis result shows that, People are forgoing/sacrificing food consumption (reduce the standard daily calorie intake) in order for households to maintain for other non-food consumption expenditures/needs.

In general, the descriptive analysis of urban household poverty status of Kirkos sub city is measured based on food poverty line. As indicated above, the proportion of people living below food poverty line becomes 57.23% .As shown in Table 6 (above) for grand total row

and column Po, which is different from the Ethiopian urban areas poverty head count of 35% as reported by MoFED (2002).

4.4. Descriptive analysis of urban household poverty

As mentioned earlier, the descriptive analysis of this study is based on the socio economic and demographic characteristics of the data obtained by household survey in Kirkos sub city. The next descriptions take the food energy intake approach (FEI) or food poverty line to identify the poor households from the non-poor households. The results obtained are discussed in the subsections below.

4.4.1. Gender and poverty

Due to socio-economic factors poor women headed households are greater than men headed households. Several studies, such as determinants of poverty in Gondar city studied by Getachew (2009), and determinants of poverty in Mexico studied by Shewaye (2002) reason out many factors for the case. Female headed households have less opportunity in monetary income generation than households headed by men.

Table: 9 Samples showing Gender and poverty status in Kirkos sub City

Sex of samples	Poor	%	Non-Poor	%	Total	(100%)
Male	29	40.9	33	63.5	62	70.4
Female	42	59.2	19	36.5	61	49.6
Total Samples	71	100	52	100	123	100

Source: Author's field level survey of 2020.

Figure 2: Distributions of samples by Gender and poverty status in Kirkos sub City
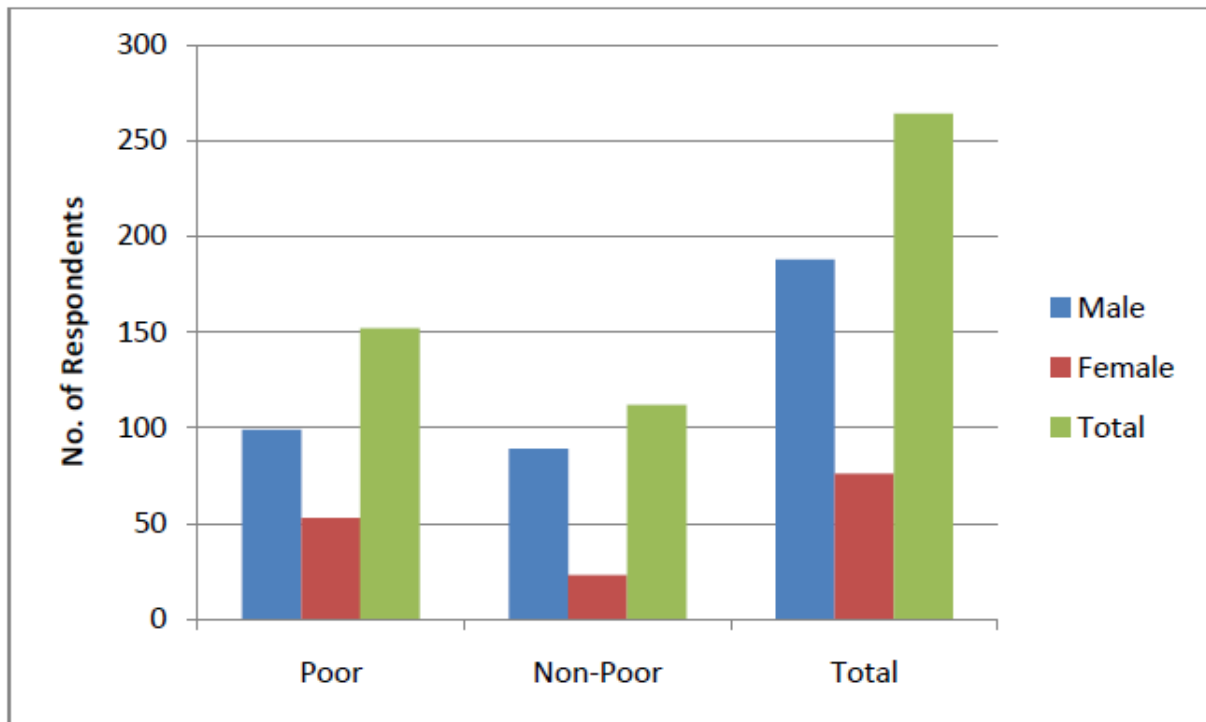
Source: Author's field level survey of 2020.

In the study, from the total of 123 sample households interviewed, 29.2% are female household heads, and 70.8% are male household heads. Of the total female headed households, 68.8% of them are found to be poor; and 31.2% are non-poor. Of the total male headed households, only 52.4% of them are poor, and the rest (47.6%) are non-poor.

The study results obtained about gender of household heads and poverty status tally with or support the theories of Wratten (1995), Shewaye (2002) and Mekonnen (2002) that, gender based differentials in vulnerability to illness and violence as well as women's subjected to discrimination in labor markets, in getting credit services, property ownership, etc. compared to men. Because of these, female-headed households are the most affected and vulnerable groups to growing urban poverty. The chi-square test $x^2(1) = 6.05$ = critical value = 6.05 also indicates significance at 95% confidence interval. This implies that poverty more affects female household headed ones than their male counter parts.

4.4.2. Marital status and poverty

Scholars, like Ravallion (1994) argue about the relation between poverty level and marital status of households. In poverty correlation analysis, marital status of the household head is

an important constituent of the demographic variables. Economic theory and most empirical literatures also support the notion that the chance of falling into poverty trap increases as one gets married. The actual result of the study area is discussed below.

Figure 3: Sample distribution of marital status and poverty level in Kirkos sub City
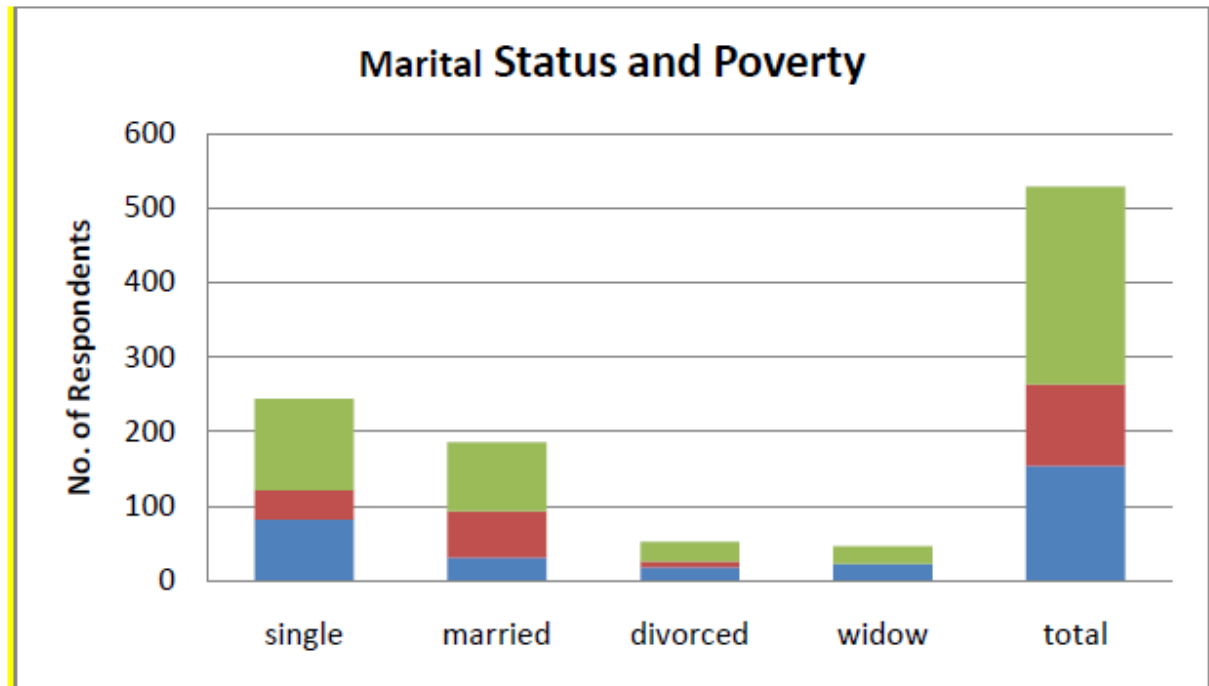
	Single	Married	divorced	Widow	total
T0tal	57	43	12	11	123
Non poor	20	23	5	4	52
Poor	37	20	7	7	71

Source: Author's field level survey of 2020.

Of the total sample household respondents, 43 (35.22%) are married; 57 (46.21%) are unmarried (single); and the remaining 11 (8.33%); and 12 (9.10%) of sample household respondents are widowed and divorced ones, respectively. As shown in Figure 2 above, from the total of 71 poor sample household respondents who live below the poverty line, unmarried sample households accounts 37 (53%); while married poor sample households account 20 (19.9 %) followed by widowed 7 (15.2%), and divorced 7(15.2).

Even though the proportion of the unmarried groups relative to the total poor unmarried (single) are found to be higher than the non-poor unmarried (i.e., 65.6% of the total

unmarried), the proportion of poor people in widowed and divorced proportional to the total widowed and divorced sample respondents are found to be high i.e. 100% and 69.23%, respectively. Thus higher proportion of the poor is found in widowed and divorced sample household categories, respectively.

The relation between marital status and poverty does not coincide with the arguments of Getachew (2009) that, the probability of falling in to poverty increases as one gets married. The chi-square test $x^2(3) = 45.57$ is significant since it is much greater than $x^2(3)$ critical $=7.81$ at 99% confidence interval. This implies that poverty increases as one does not get married as indicated in the report above; and this argument does not justify the argument that large families in developing countries are exposed to growing poverty.

4.4.3. Poverty and household age

Scholars, like Mekonnen (2002) argue that, as an individual gets older, the probability of the same individual to be poor becomes higher and higher. This is true in developing countries where an individual becomes poor at old age as his/her productivity decreases having few savings to compensate for the loss of his/her productivity and income. At the younger age, the probability of being poor also becomes high due to low job opportunities and other priorities, like lack of education and the like.

In the study area, 82.9% of the households were within the age of 20 to 60; 12.5% of the respondents were found to be above the age of 60; and the remaining 4.5% of them have fallen below 20.

However, when we compute the share of the poor, within their age range total, some 76.8% (age 20 to 60) household heads are poor; while, 5.9 % and 17.2% of the poor are found with the age range below 20 and above 60, respectively. This result, however can lead to a wrong conclusion, in that the share of respondents in the age range of 20 to 60 are not considered properly. When we compute the share of the poor within their age range total, 53% are found in the age range of 20 to 60; while78.8% and 75% of the poor are found in the age above 60 and below 20, respectively.

The study results are therefore, found to be in conformity with the findings of previous researchers (Mekonnen, 2002; Groot 1997; Garza 2001). In addition, the result was in conformity with the life cycle theories, which states that poverty is relatively high at younger ages due to low income; decrease during middle age due to increase in income; and then

increase again at old age where income gets very limited. The chi-square test $X^2(3) = 9.5$ obtained is greater than $x^2(3) = 5.99$ critical value; and becomes significant at 95% confidence interval, assuring that differences exist between the poor and non-poor households based on their age ranges.

4.4.4. Poverty and education of households

In the study area, information about household's educational level was collected. Analysis of the data collected shows that among the total of 15 poor sample households 21.1% of them are illiterate. A total of 25 sample households (23%) of the poor sample category have attended up to grade eight or below. As shown in Table 11 below the number of sample households who attend secondary school at certificate level are 32 household samples, which make up 21% of the total households; while those households who graduates with first degree and above are 22.5%. Hence, analysis findings of the study suggest that, the trend to being poor diminishes as the educational attainment of households increase.

Table 10: Poverty and households educational status by social categories

Poverty status	Percentage shares by social categories					
Household size	Poor	%	non poor	%	total	%
Four and below	40	57%	41	77.8%	81	**66%**
Five to eight	29	41%	10	21.2%	39	**33%**
Nine and above	2	2%	1	1%	3	**1%**
Total	71	100%	52	100%	123	**100%**

Source: Author's field level survey of 2020

As shown in Table 10 above, the share of poor household size four and below are 57%; while poor households that have household sizes of five to eight are 41%, and with nine and above 2% of the total poor households. When we compute the share of the poor within their respective household size in terms of age ranges, it appears to be 49.4%, 72% and 75% for age ranges of four and below, five to eight and nine and above, respectively.

The result is consistent with the theory of Lawson (2003). According to Lawson's study in Uganda, an increase in household size has significant positive influence on the likelihood that a household is chronically poor or fall into poverty trap. The chi-square test $X^2(3) = 12.61$ which is greater than $x^2(3) = 5.99$ critical value, becomes significant at 99% confidence

interval. The result of the study becomes consistent with the same theory in that as household size increases, the probability of the household to fall in poverty trap increases.

Table 11: Poverty and households educational status by social categories

Categories	Illiterate Groups	Primary Education	Secondary education level	Diploma Level	First Degree and Above	Total
Poor	15	25	15	7	9	71
Non Poor	5	8	11	9	19	52
Total	20	33	26	16	28	123

Source: Author's field level survey of 2020

The analysis results are found to be consistent with the theories of Mekonnen, Bereket and Abebe (2002) that assured the remarkable correlation between poverty and the level of education on their studies. The study found out that, the percentage of poor people significantly declines as the level of education of the household heads increase. The outcome of the researcher's survey also asserted that the size of non-poor household's level of income increases relatively as the household educational attainment increases. The results of Chi-square test $x^2(4) = 27.28$) greater than $x^2(4) = 9.49$ critical values significant at 99% shows the presence of significant relation between poverty and education level of households (i.e., poverty decreases as the household educational attainment become higher).

4.4.5. Poverty and household head education

Education plays a significant role in reducing poverty. As explained earlier households who attended higher educational level have low probability to be poor; and those who have not attended would have higher probability of being poor. Getachew (2009) argue that poverty can pass on from parent to child like other hereditary relationship. This is because parents who are poor are not able to invest on children's education; and this denies them the opportunity to create assets. As a result, a child who grows from poor family is very likely to become poor, though there could be exceptions. An assessment of the education level of sample households as it relates to poverty is indicated in Table 12 below.

Table 12: Poverty and household head education in Kirkos sub city.

Educational level	Percentage shares by social categories					
	Poor	%	Non Poor	%	Total	%
Illiterate	15	21.1	5	9.6	20	16.3
Primary (1-8)	25	35.2	8	15.4	33	26.8
Secondary to certificate	15	21.1	11	21.5	26	21.14
Diploma	7	9.9	9	17.3	16	13
Degree and above	9	12.7	19	36.7	28	22.8
Total	71	100	52	100	123	100

Source: Author's field level survey of 2020

As shown in Table 12 above, of the total illiterate sample respondents, 16% of them are poor and the largest share of the poor come from such household base. From the total sample households, the percentage share of the poor for each primary, secondary to certificate, diploma and first degree and above educational levels are: 27%, 21%, 13% and 23%, respectively. Thus, with an increasing educational level of households, the numbers of households getting in to poverty tends to decrease. With regard to this, Human Capital Theory draws links between education and poverty. Education as a means of poverty reduction increases GNP at macro level. Thus, the same theory states that investment on education is one of the main policy intervention areas of a country that enables to alleviate poverty.

4.4.6. Poverty and employment type:

In the study area, the sample respondent's employment (occupation) type is summarized below based on analysis results shown in table 13.

Table 13: Poverty and employment types in Kirkos sub City

Employment Type	Percentage shares by social categories					
	Poor	%	Non-Poor	%	Total	%
Self Employed	42	59.6%	36	69%	78	63%
Government hired	12	17.2%	8	16%	20	17%
Private sector Employed	7	9.9%	2	3.5%	9	7%
Non-Government	1	1.3%	6	12%	7	6%
Daily Labourer	9	12%	0	0	9	7%
Total	71	100%	52	42.8%	123	100%

Source: Author's field level survey of 2020

From the total sample household respondents, 63% are self-employed; while 17% are government employees. Some 7% and 6% of the sample respondents are employed in the private sector and NGOs, respectively; while some 7% of the total respondent's sale their labour (as daily labourers).

The analysis results show that, the highest numbers of the poor (59%) are found self-employed; and Government organizations are found as the second sources of employment for some 17% of the total sample respondents. The size of daily labourers and private sector employed sample households account for 12% and 9.9% of the total poor sample households, respectively. Self-employment includes different employment types and activities, like: petty trading, trade, metal and would works, Tella/Tej preparation and selling, including other trading activities like hotel, and restaurants, and shopping related business activities. Abbi and Andrew (2003) did argue that, there is a negative and significant relation between employment level of the household heads and the incidence of poverty.

Therefore, identifying and understanding which type of self-employment those poor households are engaged in is very important for promoting different job opportunities.

Table 14: Types of self-employment (occupation)

Self-Employment Types	Percentage shares of self-employment by social categories					
	Poor	**%**	**Non-Poor**	**%**	**Total**	**%**
Petty-trade	35	49.3	16	30.8	51	41.5
Other trading Activities	15	21	23	44.2	38	30.9
Metal/Wood Works	13	18	11	21.2	24	19.5
Hotel and restaurant	5	7	2	3.8	7	5.7
Tella/Tej preparation and selling, and others	3	4	0	0	3	2.4
Total	71	100	52	100	123	100

Source: Author's field level survey of 2020

From the total of 123 self-employed sample households, 51(41.5% respondents are employed in petty trading, and 38 (30.9%) in other trading activities; while 24 (19.5%) are engaged in metal/wood works, and 7 (5.7%) respondents engaged in the preparation and selling of local alcoholic drinks (tella/tej) and other micro activities. Only 3(2.4%) of the total respondents are engaged in hotels and restaurants. In particular, petty trading activities, like tella/tej preparation and selling, and other micro business activities are found to be the main poor households" employment sources. On the other hand, business activities relating to hotels and restaurant management in the sample study area is found to be non-poor's ownership and employment sector. CSA (1999) national labour survey showed that, urban centers in Ethiopia have little economic dynamism and their economic base is largely services and trade.

Respondents were asked whether they have unemployed active work force member in their household. Among the total sample respondents 123 (70%) replied yes there is; while the other 79 (30%) households replied no unemployed active work force in their respective households. Thus, in the study area, 70% of the households have unemployed household members who could significantly contribute to the respective families/household income and to the city's economy at large, if they get the employment opportunities. Of the total respondents who replied having unemployed household members, 85 (56.3%) of them are in the poor household category; while the remaining 43.7% are from those sample households of the non-poor social groups.

4.4.7. Poverty and housing conditions

Housing conditions are important measures of poverty via increased utility and its impact on health status of households. In the study area, some 13% of the sample respondents have their own houses. The other 47% and 40% of the samples get the housing facility rented from private owners and wereda administrations, respectively. From the total poor sample households, some 13% of them have their own houses; and the remaining 47% and 40% of the households live in houses rented from private house owners and kebeles, respectively. The majority of the poor households who do not own houses live mainly in houses rented from private owners.

Table 15: Poverty and housing conditions in Kirkos Sub city.

House ownership situation	Percentage share by social categories					
	Poor	%	Non-Poor	%	Total	%
Own house	12	16.9	4	7.7	16	13
Keble's house rented	27	38	22	42.3	49	40%
Private house rented	32	45.1	26	50	58	47%
Total	71	100	52	100	123	100

Source: Author's field level survey of 2020

From the total of non-poor sample households, 50% of them live in private rented houses; while 7.7% of them live in their own houses followed by 42.3% living in rented kebele houses. Ownership of houses is one way to differentiate the poor from the non-poor households because the non-poor households mainly have their own houses compared to their poor counter parts.

4.5. Econometric analysis of the determinants/correlate of urban household poverty

This section deals with the relative role of different factors that leads households to poverty.

All of the factors presented are expected to have influence to push households to the poverty trap or to bring out from the poverty trap. Each factor has not the same effect. The purpose of this analysis is to identify the effects of individual factors. This could be achieved by fitting the probability of an individual being poor as a function of the various household's socioeconomic and demographic characteristics through the use of logit model.

In the subsections below, the assumption held in the regression of the model under investigation are treated first and, followed by the analysis of results and discussions.

4.5.1. Hetroscedasticity

Hetroscedasticity means a situation in which the variance of dependent variable in this study / the probability of being poor or non-poor/ varies across the data. Hetroscedasticity complicates analysis because many methods in regression analysis are based on the

assumption of homoscedasticity or equal /homo/spread /scedasticity/ equal variance. In logit analysis, there is no equal variance or homogeneity of variance assumption and the variance of the error terms is not constant.

4.5.2. Multicolinearity

Multicollinearity is the situation in which the explanatory variables are highly correlated or show little variation between them. Multicolinearity does not change the estimators or coefficients. Multicolinearity can be detected by a number of ways. High standard error and variance inflation factor /VIF/ are main indicators in this study (i.e. standard error does not have problem for multicolinearity). The variance inflation factor is given by the formula $VIF=1/2 - R_2$; and is often given as the reciprocal of the above formula. That is, 1/VIF which is equal to $1-R_2j$; where Rj is the multiple correlation coefficient. In this research, VIF is computed using 'stata' software; and Table 25 below shows these values for the lists and assumptions of the variables used in the model.

Table 16: Multicollinearity Test (vif)

Variable	VIF	1/VIF
age	2.05	0.49
Agesquare	2.24	0.45
Hhsize	2.44	0.41
Sexhh	2.22	0.45
Marstatus	2.01	0.50
Elec	1.78	0.56
Educthh	1.67	0.60
House	1.56	0.64
Depratio	1.30	0.77
Income	1.25	0.80
Emptype	1.12	0.89
Sickmbr	1.10	0.91
Mean	1.73	

When there is collinearity among variables, $R2$ approaches one; while 1/VIF approaches to zero. When there is no multicollinearity, $R2$ approaches zero; while 1/VIF approaches one. In this case, 1/VIF value would be slightly far away from zero; and it approaches one. In addition the mean value of VIF becomes 1.73. This implies that, there is less and acceptable collinearity.

4.5.3 Model Result and Interpretation

The result of the logit model is presented in series of tables under this subsection. These consists the variables, the estimated coefficients, the odds ratio and the marginal effects for explanatory variables included in the model. The odds are the ratio of the probability of being poor to the probability of not being poor. The odds ratio indicates the change in the odds of being poor as opposed to not being poor in response to one unit increase in independent variables. Marginal effect is the percentage change on the probability associated with a unit change in the explanatory variable.

Table 17: Logit estimates the odds of factors affecting urban household poverty.
Logit poverty age agesquare sexhh marstatus hhsize depratio educthh emptype income sickmbr elec house

Iteration 0:00	log likelihood = -180.246
Iteration 1:00	log likelihood = -130.643
Iteration 2:00	log likelihood = -114.398
Iteration 3:00	log likelihood = -113.181
Iteration 4:00	log likelihood = -113.176
Iteration 5:00	log likelihood = -113.176
Logistic regression	Number of obs = 123
LR chi2(12) = 134.14	
Prob > chi2 = 0.0000	
Log likelihood = -113.17631 Pseudo R2 = 0.3721	

Poverty	Coef.	Std. Err.	Z	P>z	[95% Conf. Interval]	
Age	-0.14982	0.08755	-1.71000	0.09000	-0.32141	0.02177
Agesquare	0.00199	0.00097	2.06000	0.04000	0.00009	0.00389
Sexhh	-0.25052	0.59953	0.42000	0.68000	-0.92454	1.42558
Marstatus	-0.03588	0.28571	-0.13000	0.90000	-0.59587	0.52411
Hhsize	0.46685	0.13243	-3.53000	0.00000	-0.72640	-0.20730
Depratio	0.19596	0.29506	-0.66000	0.51000	-0.77427	0.38234
Educthh	-0.46244	0.15633	2.96000	0.00000	0.15605	0.76883
Emptype	-0.34320	0.31923	-1.08000	0.28000	-0.96889	0.28248
Income	-0.00214	0.00036	6.02000	0.00000	0.00144	0.00283
Sickmbr	0.57400	0.44811	1.28000	0.20000	-0.30428	1.45228
Elec	-1.17985	0.47639	-2.48000	0.01000	-2.11356	-0.24613
House	-0.42801	0.19606	2.18000	0.03000	0.04375	0.81227
_cons	0.38682	2.40874	0.16000	0.87000	-4.33423	5.10787

Note: 0 failures and 1 success completely determined.

In the model, sex of a household head (sexhh), marital status, (marstats), household size (hhsize), dependency ratio (depratio), employment type (empntype), age of household head (agehh) education of household head (educthh), education of households head /hhpedutn), average incomes of adult equivalent per day (mothincm), sick member (sickmbr), electricity, housing condition (hcon) are determined. The negative coefficient of income implies that as the households per adult equivalent income increases from the average income, the probability of households falling in to poverty decreases. The positive coefficient of household size shows that, there is a positive relationship between household size and poverty. This means that, as a household size increase, the chance of falling in to poverty trap increases. This is consistent with the theory of World Bank (2000), which states as "large household size tends to be associated with poverty." The positive sign in the logit regression shows the presence of sick members among the sample households, who are affected by frequent disease occurrence or illness. When the household member becomes sick, there will be cost of medication, job loss and loss of productivity which gradually leads the household to fall in to poverty. If the household is poor, family members cannot take balanced diet; and because of such problem, the sick often lacks resistance to different diseases. Thus, poverty and frequent illness of household members are reinforced each other; and have strong correlation.

The negative value of household's employment type indicates that, as household heads are working in professional occupations in the public or private sectors, the probability of being poor decreases, while the probability of household heads who works in causal or informal work being poor increases. Households are assumed to earn more income in a formal and permanent work type than the causal or informal work types.

According to Getachew (2009), the negative value of household's primary education implies that, an increase in the education level of the poor households tend to reduce their poverty.

This is because education increases the stock of human capital, which in turn increases labor productivity and wages due to the fact that labour is the most important asset of the poor.

The model estimation for marital status and poverty shows negative relationship. When people get in to marriage, the probability of falling in to poverty diminishes. This is because the household can utilize the advantages of economies of scale and marriage can bring additional work force that helps to increase the household income.

The negative value of house ownership and probability of being poor indicates that as the household owns a house the cost of the house (i.e., rental expense) can be diverted to other necessities. In addition, house ownership enables to generate income through renting and using for other income generating activities. Since a house is a source and means of income, the household probability to earn income rises; and the probability to be pushed in to poverty decreases.

Another important way to analyze the effects of the independent variable with the probability of being poor is through the effect of the odds ratio as the independent variables change. Table 18 below shows the details of the model estimation.

Table 18: Odd ratio estimates of poverty determinants in Kirkose Sub city.

Logit poverty age age square sexhh marstatus hhsize depratio educthh emptype income sickmbr elec house.

Iteration 0:00	log likelihood = -180.246
Iteration 1:00	log likelihood = -130.643
Iteration 2:00	log likelihood = -114.398
Iteration 3:00	log likelihood = -113.181
Iteration 4:00	log likelihood = -113.176
Iteration 5:00	log likelihood = -113.176
Logistic regression	Number of obs = 123
LR chi2(12) = 134.14	
Prob > chi2 = 0.0000	
Log likelihood = 113.17631 Pseudo R2 = 0.3721	

poverty	Odds Ratio	Std.Err.	Z	P>z	[95% Conf. Interval]	
Age	0.86086	0.07537	-1.71000	0.08700	.7251239	1.022008
agesquare	1.00199	0.00097	2.06000	0.04000	1.000093	1.003896
Sexhh	0.28469	0.77021	0.42000	0.67600	.3967145	4.160254
marstatus	0.96475	0.27564	-0.13000	0.90000	.551081	1.688947
hhsize	1.62698	0.08303	-3.53000	0.00000	.4836485	.8127753
depratio	1.82204	0.24255	-0.66000	0.50700	.4610421	1.465716
educthh	0.58795	0.24824	2.96000	0.00300	1.168886	2.157245
emptype	0.70949	0.22649	-1.08000	0.28200	.379505	1.326412
income	0.00214	0.00036	6.02000	0.00000	1.001441	1.002836
Sickmbr	1.07536	0.79555	1.28000	0.20000	.7376554	4.272842
Elec	0.30733	0.14641	-2.48000	0.01300	.1208072	.7818199
House	0.53420	0.30079	2.18000	0.02900	1.044718	2.253022

Note: 0 failures and 1 success completely determined.

As shown in table above, all variables which have odd ratio greater than one implies positively correlated with the probability of being poor, whereas variables which has odds ratio of less than one have negatively correlated with the probability of being poor. Thus

variables such as female headed households, large households" size, large proportion of women, high dependency ration, and frequent illness of household members, and infrastructure services inaccessibility are positively correlated with probability of being poor.

Variables, such as; being married, housing ownership, high level education of household head, high level of adult equivalent income of households have negative correlation with the probability of being poor.

The variable of household members or hh head employment type logit estimation shows negative and specifically significant outcome, implying that as chance of households public employment increases by one, citrus paribus odds ratio of households of being poor will be decreased by 0.709 factors. Marital status of household also shows statistically positive significant result, implying that as the households gets married, catteries paribus the odds and odds ratio of being poor decrease by factors of 0.035.and 0.964, respectively. On the other hand, if the number of family size of the household increases by a unit, the odds and the odds ratio keeping all other variables constant increase by a factor of 0.466 and 1.626, respectively.

This indicates the positive relationship between household size and poverty. In other words, the result assures that an addition of a household size pushes the household to the poverty trap significantly. Similarly, the adult equivalent monthly household income, keeping all other variables constant, decreases by a factor of 0.002 for both odds and odds ratio. Improving income generating opportunities of household through different options would be an important step towards poverty reduction policies and strategies, particularly for the sub city of Kirkos. Ownership of house also has negative relation with the probability of falling to poverty. As the analysis result in Table 17 above shows, as household owns a house, the odds and odds ratio of being poor decreased by a factor of 0.534 and 0.428, respectively. Completing primary education of the household head is found to be associated with poverty.

The results obtained from the model revealed that as the heads of the households completed primary education, citrus paribus the odds and odds ratio of the household being poor decreases by a factor of 0.462 and 0.587, respectively. This implies that lack of education is a factor that pushes households to fall in to poverty. Therefore, promotion of education becomes central in addressing problems of poverty, especially primary level education is found to have paramount importance in reducing poverty.

Since the logit model is not linear, the marginal effects of each independent variable on the dependent variable are not constant; but, it is dependent on the values of the independent variables (Green 1983). Thus, as opposed to the linear regression case, it is not possible to interpret the estimated parameters as the effects of the independent variables upon poverty.

However, it is possible to calculate the marginal effect to each variable at the mean values of the independent variables.

Table 19: Showing marginal effects of each variable

Poverty	dy/dx	Std. Err.	Z	P>z	[95% Conf. Interval]		X
Age	-0.03729	0.02177	-1.71	0.09	-0.07996	0.00538	39.02650
Agesquare	0.00050	0.00024	2.06	0.04	0.00002	0.00097	1706.65000
Sexhh	-0.06235	0.14919	0.42	0.68	-0.23005	0.35475	1.28409
Marstatus	-0.00893	0.07110	-0.13	0.90	-0.14829	0.13042	1.77273
Hhsize	0.11620	0.03304	-3.52	0.00	-0.18095	-0.05144	3.59848
Depratio	0.04877	0.07347	-0.66	0.51	-0.19278	0.09523	0.56439
Educthh	-0.11510	0.03880	2.97	0.00	0.03906	0.19114	3.45455
Emptype	-0.08542	0.07933	-1.08	0.28	-0.24091	0.07006	1.29924
Income	-0.00053	0.00009	5.88	0.00	0.00036	0.00071	1009.80000
Sickmbr	0.14287	0.11143	1.28	0.20	-0.07553	0.36126	1.81061
Elec	-0.29366	0.11814	-2.49	0.01	-0.52521	-0.06210	1.48864
House	-0.10653	0.04881	2.18	0.03	0.01086	0.20220	2.03409

Marginal effects after logit

$$y = Pr \text{ (poverty) (predict)}$$
$$= 0.4667443$$

Hettest

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

Ho: Constant variance

Variables: fitted values of poverty

chi2 (1) = 8.43

Prob > chi = 0.0037

Ovtest

Ramsey RESET test using powers of the fitted values of poverty

Ho: model has no omitted variables

F (3, 248) = 14.83

Prob > F = 0.0000

The coefficients of marginal effects show the discrete change of explanatory variables keeping other things constant to change the probability of dependent variables/probability of being poor). As indicated in the table above an additional unit in the household size increases the probability of being poor by a factor of 0.116 keeping all other variables constant at their mean values. An additional unit in primary education decreases the probability of being poor by a factor of 0.115 holding all other variables constant at their mean values. This means that the risk of an individual being poor diminishes as the level of education increases.

On the other hand, an addition of ill household member in the household increases the probability of being poor by 0.142 holding all other variables constant at their mean values.

Hence, improving health condition of a household needs proper policy intervention; and practical action is needed to bring out households in the study area from the poverty trap. This can be possible through establishment of proper health infrastructure and sanitation services throughout the sub city, and proper targeting of the poor households who settle in marginalized locations.

An additional unit of households per adult equivalent monthly income will decrease the probability of being poor by 0.0005 keeping other factors at their mean values. This suggests the need to focus on program activities that increases the average income of households. This would enable to reduce poverty drastically; and this suggests also the need for creation of income generating program activities as a priority of the sub city administration.

Employment of households in public/formal sector correlates negatively with the probability of being poor. As depicted in the marginal effects estimation, additional employment of household's members in the formal/public sector reduces the probability of being poor by 0.085. Housing ownership also reduces poverty greatly. When a household owns a house, the

probability of being poor in the city reduces by 0.106. These all become true when all variables are kept constant at their mean values.

The interpretations of the remaining variables are similar to the variables explained above. The variables that have positive correlations/relationships increases the probability of households from being poor; and variables that have negative correlate reduces the probability of households to be poor . This can only be possible when the p- value is significant at defined confidence interval. Variables with no significant p-value can't affect the dependent variable by the factors/estimated coefficients in the model.

In summary, the econometrics regression outcome for most of the variables will go with the expectation of the researcher since their coefficients are significant. Education of a household head; marital status, employment type, house ownership, income of the household, health condition of the household, and household size are significant variables indicating that, these variables are determinants of urban household poverty.

CHAPTER FIVE

Conclusion and Recommendation

5.1. CONCLUSION

A field survey on the determinants of urban poverty and coping strategies of household on urban poverty prevalent among town households was conducted. The strategies that household use for purposes of coping with urban poverty and whether the adopted household poverty coping strategies had no relationship with the sex of the head of the household and had no significant difference with type of household. One hundred twenty three households were sampled and the data generated were analyzed with the statistical tools of spearman correlation, independent sample test and binary logistic regression. Findings were that households adopt different strategies. The choice of poverty coping strategy adopted by each household was not influenced by the sex of the head of the household. Findings indicate that there is no significant difference in household coping strategies amongst the types of household; and there is no association between the sex of household and households coping strategies were tested chi-square, spearman correlation and independent test statistics and both were rejected and the alternative hypotheses were substituted. Socio-economics analysis shows that education, family size, type of household, contribution of wife or husband in finance and monthly income of household are the major determinants of poverty in this study. The results show that education, size of household, type of household, contribution of wife/husband to finance and monthly income of household heads are the major determinant factors of urban poverty. Keeping the above analysis in view, there is needed to focus on the education of the poor because human capital plays vital role in breaking the problem of poverty. Public sector and private sector along with community participation should manage and create human capital in the shape of better technical education that will increase the productivity of the urban poor. There is need to develop extra jobs in which wife, husband and other members of household may engaged in earning some amount of money and take risk of the household. There is need to decrease the total size of household with the available resource which will help the members of household to get access of quality education and other service.

The researcher used the food energy intake approach in the identification of the poor from the non-poor. The researcher first enumerated baskets of food items households frequently

consume in the area. Secondly these bundles of food items were weighted in kilograms. Third, the aggregate kilograms of food bundles were divided into the number of family sizes. This gives the average amount of kilograms an adult person would consume in a day. This kilogram is again converted into the amount of calorie equivalents it yields; and is calibrated to the predetermined minimum value of 2200 calorie per day per adult.

The computed poverty line of Kirkos sub city as 12.90 Birr and 15.66 for food and non-food items was taken, respectively. Based on the current exchange rate (at the time of the study) 1 US $ costs 38 Ethiopian Birr and this amount is considered as international poverty line to identify the poor from the non-poor. Of the total 123 respondents, the study found that 57.2% of them live below food poverty line; 76.14% below total poverty line; while 82.95% of the samples are found living below one dollar a day poverty line.

5.2. RECOMMENDATION

Although the level of education of some respondents was found to be high, many respondents were still not gainfully employed. This raises the issues as to the quality of education received by the respondents. The study recommends that formal education of citizens should be made functional so that people will be able to practice on their own the skills and knowledge they acquired through education. To this end, it is recommended that the government should provide the enabling environment and legal framework needed to make the education of the people functional. Schools should change their curriculum to achieve this objective. Furthermore, opportunities should be provided for all to have functional education as it is fundamental to poverty alleviation through actualization of one's full potentials and further development of the larger society. Government and the organized private sector should create employment opportunities, so that graduates of these schools would find jobs suitable and commensurate to their educational training.

Healthcare facilities and services should be made available and affordable to the people to reduce the incidence of patronizing self-medication. This is very important if it is considered that the majority of the respondents, who sought medical care in hospitals other than private clinic, did so because they were unable to afford the cost of treatment in private clinic.

The study come up with female-headed households are more likely to be poor than households of which the head is men. The implication is therefore that promoting female education should be an important element of poverty reduction policies this is because

education and fertility are negatively correlated such a policy could also have an impact on household size which is another important determinant of poverty in the town.

Since educational attainment of the head of the household is found to be the most important factor associated with urban poverty households suggests focusing mainly on the value of education to address incidence of poverty. Specifically, Promoting higher education may also have important contribution to minimize poverty in the town. Since household size is found to have positive relationship with poverty as the study depicted. This manifests for the residents of the town in that households with large size will fall into the section of poverty easily than those who have not. Thus, in order to minimize such effects, family plans and/ or education of couples be provided by the concerned bodies. In the regard the town's health service can play a great role.

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