ADDIS ABABA UNIVERSITY POSTGRADUATE PROGRAMS DIRECTORATE SCHOOL OF COMMERCE DEPARTMENT OF DEVELOPMENT ECONOMICS



THE DETERMINANT OF POVERTY DYNAMICS IN ETHIOPIA

A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, POSTGRADUATE PROGRAMS DIRECTORATE, SCHOOL OF COMMERCE, DEPARTMENT OF DEVELOPMENT ECONOMICS FOR THE REQUIREMENT OF THE DEGREE OF MASTERS OF SCIENCE IN DEVELOPMENT ECONOMICS

SUBMITTED BY: LUBABA SEMAN

ADVISOR: AREGAWI G. (Ph.D.)

ADDIS ABABA UNIVERSITY

August 3, 2021

ACKNOWLEDGMENTS

First, I would like to express my appreciation and gratitude to my family and friends, especially my husband (Mubarek Yasin) and my mother (Zuriyash Mohammed) for the encouragement, affection, and support they have given me. Also special thanks for Toyba, Ashraf, and Eyasu. Last I would like to express my deep gratitude to everybody who has helped me to accomplish this thesis.

TABLE OF CONTENTS

ACKNOWLEDGMENTS ii
TABLE OF CONTENTS iii
LIST OF TABLES v
LIST OF FIGURE v
LIST OF APPENDECIES vi
LIST OF ABBRIVATIONS vii
ABSTRACT viii
1. CHAPTER ONE: INTRODUCTION 1
1.1. Background 1
1.2. Problem Statement 3
1.3. Objective of the study 4
1.3.1. General Objective 4
1.3.2. Specific Objectives 4
1.4. Research Questions/Hypotheses 5
1.4.1. Research question 5
1.4.2. Research Hypotheses 5
1.5. Significance of the Study 8
1.6. Scope of the Study 9
1.7. Limitations of the Study 9
1.8. Organization of the Study 9
2. CHAPTER TWO: REVIEW OF RELATED LITERATURE 11
2.1. Theoretical Framework Poverty Dynamics 11
2.1.1. The need for studying poverty dynamics 11
2.1.2. Definition of Chronic Poor and Transitional Poor 14
2.2. Methodological and Analytical Frameworks 15
2.2.1. Measurements of Poverty Dynamics 15
2.3. Empirical Studies of Chronic Poor and Transitional Poor in Ethiopia. 17
2.4. Conceptual Frame Work 20
3. CHAPTER THREE: RESEARCH METHODOLOGY 21
3.1. Data source 21

3.2. Setting Poverty Lines 21
3.3. Description of the Study Parameters 23
3.3.1. Demographic Variables 23
3.3.2. Socio-economic Variables 24
3.4. Data Analysis 25
3.4.1. Descriptive statistics 25
3.4.2. Economics and Econometrics models 25
3.4.3. Analysis approach and control variable 27
3.5. Scale Reliability and Validity 28
4. CHAPTER FOUR: RESULTS 29
4.1. Poverty Dynamics and Its Proportion 29
4.1.1. Poverty Trend of Ethiopia 29
4.1.2. Poverty Dynamics of Ethiopia 30
4.2. The Determinant of Poverty Dynamics in Ethiopia 34
5. CHAPTER FIVE: DISCUSSION 39
5.1. Poverty Trend of Ethiopia 39
5.2. Poverty Dynamics of Ethiopia 40
5.3. Determinant of Poverty Dynamics in Ethiopia 41
6. CHAPTER SIX: CONCLUSION AND RECOMMENDATION 44
6.1. Conclusion 44
6.2. Recommendation 46
7. REFERENCE 47

LIST OF TABLES

Table 2.1 Theoretical Concepts of Poverty ……24

Table 2.2 Example of Poverty Trend ……26

Table 2.3 Poverty Head Count Index of Ethiopia ……..……30

Table 4.1.1: Poverty Status on 2012, 2014, 2016 and 2019 ……39

Table 4.1.2: Poverty Status on 2012, 2014, and 2016……..…40

Table 4.2.1 Determinant of Poverty Dynamics 2012, 2014 and 2016 Rural ……44

Table 4.2.2 Determinant of Poverty Dynamics 2014 and 2916 Urban ……46

LIST OF FIGURE

Figure 2.4 Conceptual Frame work …….....31

Figure 4.1.2.1: Poverty Dynamics at year of 2012 and 2014 ……41

Figure 4.1.2.2: Poverty Dynamics at year of 2014 and 2016 ……42

LIST OF APPENDECIES

Annex 1 Description of Household Resident and Age of Household head ….....i

Annex 2 Description of Educational Status of Household head, Occupation of Household head and Ownership of Dwelling i

Annex 3 Description of Number of Household, Distance from the Market and Dependency Ratio …….v

Annex 4 Description of Sex of Household head, Non-farm Activity and Shock…….vi

LIST OF ABBRIVATIONS

CSA	**Central Statistics Agency**
ESS	**Ethiopian Socio Economic Survey**
ETB	**Ethiopian Birr**
FDRE	**Federal Democratic Republic of Ethiopia**
GDP	**Gross Domestic Product**
GTP	**Growth and Transformation Plan**
IMF	**International Monetary Fund**
LSMA-ISA	**Living Standard Measurement Study –Integrated ` Survey on Agriculture**
MDP	**Multidimensional Poverty**
MDGs	**Millennium Development Goal**
PSNP	**Productive Safety Net Program**
SDG	**Sustainable Development Goal**
SNNPR	**Southern Nations, Nationalities, and Peoples' Region**
UN	**United Nation**
UNDP	**United Nation Development Program**

ABSTRACT

This study examines the determinants of poverty dynamics in Ethiopia. Poverty reduction has been the crucial issue for the development of the nation. But alleviating poverty has becomes difficult due to the structure and complexity of poverty. It became more unsolvable with policies and development programs. This study applies the spell approach of poverty experience and the ordered logit model to identify the poverty status of households: poor, transient poor (-), transient poor (+) and non-poor. Observing the ESS balanced panel dataset of 2011/12, and 2013/14 covering 3,777 rural households, from the study finding 70.13% of poor households classified as chronic poor (remained poor in two periods) while 8.93% of non-poor households are vulnerable to being transient poor (-). And observing the ESS balanced panel dataset of 2013/14, and 2015/16 covering 4,547 households, the study finding is 43.39% of poor households classified as chronic poor (remained poor in two periods) while 18.76% of non-poor households are vulnerable to being transient poor (-) Our estimations confirmed that the important factors of poverty dynamics in Ethiopia are occupation of household head, ownership of house, dependency ratio, number of household members, distance from the market, non-farm income, educational status of household head, and age of household head. The finding implies that in the rural part of Ethiopia chronic poverty is higher.

1. CHAPTER ONE: INTRODUCTION

1.1. Background

Poverty reduction has been unanimously endorsed by the international community as the overarching goal of development. Different understandings of poverty, different approaches and ways of thinking about poverty lead to different ways to tackle it. Poverty can be defined in very precise technical terms that facilitate its measurement. Poverty can also be characterized in a more multidimensional yet less precise manner that helps see poverty in relation to its causes, its context, its consequences and the ways it is related to phenomena that can be influenced.

Reducing poverty and improving family well-being is an important concern for developing countries. Ethiopia is a low-income country that ranks 164th out of 187 nations (World Bank, 2017). Ethiopia has been showing growth at a higher rate than other African countries since 2004, after decades of low-income levels and slow economic growth. Previously Kenya was the nation that experienced the highest economic growth rate in East Africa. According to IMF, 2017 report, Ethiopia overtook Kenya as the largest economy in East Africa (Medina, L *et al*, 2017). From 2004 to 2014, real GDP growth averaged 10.9 percent annually and 8.0 percent per capita. Yet Ethiopia is one of the poorest countries in the world and ranked the 11th poorest country in the world by income per person. Ethiopia is the second most populous Sub-Saharan country and the most populated country in East Africa with a population size of around 90 million in 2015/16 with 2.5 percent growth per annum (FDRE, 2018). Around 84% of the populations are rural inhabitants and subsistence farmers who heavily depend on agriculture. The poorest which approximately accounts 40% live in rural areas and participate in agriculture (World Bank, 2016).

The nature of poverty in Ethiopia is supported by other pieces of evidence verifying that poverty is inherently dynamic whereby large numbers of people were escaping from poverty at any given time, while equally large numbers were also falling into poverty simultaneously. There are a number of determinants of poverty dynamics mentioned by

the different studies. In Ethiopia rural household poverty has a significant correlation with a risk factor such as (crop losses, losses of job or being unemployed, mortality, and other shocks) has shown cause for the variations in poverty. There is a risk that, at any stage in the future; the households which are not poor now may slip below the poverty line (Dercon & Krishnan, 2000). The households who have large size of land and better property are more likely to experience poverty. The relationship between land size and property holding of the household and poverty is inverse, (Woldehanna *et al*., 2011). In a rural part of Ethiopia practicing the activities of non/off-farm have a significant effect on reducing poverty; and the more access is given to credit, the higher the households to exit from poverty (Ambel, A.A. *et al*, 2015). The age of household heads in urban have a positive effect in a household being poor; educational status of the household head has a negative effect on increasing household poverty and gender of the household head being female has an effect on increasing poverty especially in the rural part of Ethiopia (World Bank, 2020).

Oduro (2002) states two determinants of poverty dynamics in Africa that is access to credit and ownership of an asset. If the households have better access to credit, most probably the household didn't experience poverty and if the household is an owner of an asset it is most likely the household will be out of poverty as both of the determinants have an inverse relationship with poverty. Ownor, *et al* (2007) put six determinants which are gender, age, education status of household head, non- farm and off-farm work, distance from the market, and access to transfer. The result of the study showed gender of the household being female and the more distance from the market has a positive relationship with poverty, on the other hand, the age of the household, access to transfer, educational background of the household and non and off-farm work have an inverse relationship with poverty.

However, the studies organized in Ethiopian poverty dynamics do not show the proportion of chronic and transient poor, both in the urban and rural area, and focus on rural areas. Which measurements should overtake for which one and the determinants are not stated directly. Which determinant makes the household transient poor or chronic poor? And who doesn't experience poverty at all and for what reasons? This paper shows

different household statuses considering poverty dynamics. Distinguishing between chronic poor, transient poor and never poor, It also shows the factors that move the household out of poverty, drive into poverty, in what reason on the household is categorized in a group chronic poor, transient poor, or never poor. The study assesses the policies that are used by the government of Ethiopia to reduce poverty. And give recommendation by considering the results of the study.

1.2. Problem Statement

Ethiopia has made some progress in poverty reduction in recent years. The estimated percentage of the population living below the national poverty line decreased to less than 25% in 2016 from 44% in 2000 (NPC, 2017). Leaving aside the controversy on positive developments of poverty reduction (Devereux & Sharp, 2003), poverty headcount rates, which are usually based on cross-sectional surveys at different points in time, fail to reveal the nature of poverty. Some of the poverty observed at one date arises from a low long-term level of living (‘chronic poverty’), whereas some of it is likely to be a temporary state (‘transient poverty’) (Jalan & Ravallion, 2000). If poverty is largely a transitory phenomenon, more households could move into and out of poverty, although poverty headcount remains the same between any two periods. As a result, standard poverty measures such as the headcount ratio ignore such underlying dynamics (Glauben et al., 2012). This analysis underlines the importance of panel data sets to measure these different types of poverty. Unfortunately, in the developing world, particularly in Africa, the study of income mobility and poverty dynamics has been hindered by a lack of panel data sets (Haddad & Ahmed, 2003; Dercon & Krishnan, 2000).

The distinction between chronic and transient poverty is important for both de- scriptive and policy purposes. Moving into and out of poverty looks less serious than remaining stuck in poverty. Someone who is poor now, but can reasonably expect to be out of poverty next year, is in a better position than someone who is equivalently poor now, and is likely to remain there in the future (Haughton & Khandker, 2009).

Decorn,2002; Bigsten & Shimeles, 2004; Dercon, Hodinott, & woldehanna, 2008; Liverpool-Tasie, L.S.O. & Winter-Nelson, 2011; Woldehanna & Hagos, 2013; Goshu, 2013; Seff & Jolliffe, 2016, and Michler & Josephson, 2017 analyze poverty by using panel data. (Woldehanna & Hagos, 2013) argue that cronic poverty in the rural household has a negative impact on growth. (Bigsten & Shimeles, 2004) explain the linkage of poverty dynamics and household vulnerability by considering the capability approach. (Michler & Josephson, 2017) show the effect of poverty dynamics in multidimensional poverty by using socio-economic variables.

This study clearly showed the determinant of poverty dynamics both in rural and urban; describe the proportion of chronic poor, transient poor, and never poor; which variable is the most significant and what kind of measure government should take considering socio-economic, demographic, and other shocks and risks through income and consumption approach with recent data. The specification of determinant factors that cause the dynamism behavior of poverty; will help to control the determinant factor of poverty dynamic to reach out to the poor with the appropriate policy by minimizing the complexity of poverty dynamics.

1.3. Objective of the study

1.3.1. General Objective

The general objective of this study is to identify the determinant of poverty dynamics in Ethiopia.

1.3.2. Specific Objectives

And the specific objectives of the study are:

1. Characterize chronic poor, transient poor and never poor households.
2. To determine the factors influencing the poverty dynamic in Ethiopian.

1.4. Research Questions/Hypotheses

1.4.1. Research question

This thesis answers the following questions

- How much is the proportion of chronic poor, transient poor, and never poor household, How much percentage of the household never been poor, how much of the household always been poor and how much of the household is sometimes poor in Ethiopia?
- What are the factors that affect the household living standard fluctuation or the parameters that bring the household out of poverty, and make the household stay in poverty for a long time or never made it out of poverty in Ethiopia?

1.4.2. Research Hypotheses

Definition of variables and hypothesis

Household Resident and Poverty

This is a categorical variable 1to rural 2 to small town and 3 for urban. The households whose residence is in urban area has less probability to expose to poverty compared to rural areas, World bank, (2016). This shows the relationship of poverty with the household residence is positive.

Distance from the Market and Poverty

It is a continuous variable and the measurement is kilometers from the residence of the household to the market centers. Bersisa & Heshmati, (2016) claimed in their research that it is more likely that households residing close to marketplaces and households closer to big cities will be more able to access various public services, that a diversified market will also provide private sector providers with better access to capital and that they will be less likely to face poverty. (World Bank, 2014) Reports that the remoteness of rural areas, which lower the price, charged by farmers for their products and increase the price paid for their purchases of the commodity they need due to high transport costs, is one of the main causes for food insecurity among the poor and contributes to household poverty. The relationship between poverty and distance from the market is negative or inverse.

Age of Head of the Household and Poverty

It is a continuous independent variable and measured by number of year. The older household heads are assumed to be wise in the distribution and usage of services, and the older a farmer experienced and, knowledge are in agricultural production. Another study conducted by Deressa & Sharma (2014) in Ethiopia indicated that the age of household head is positively associated with the poverty. It is also predicted that the age of the head of the household would be positively or negatively correlated with the well-being of Ethiopian households.

Gender of Head of the Household and Poverty

It is a dummy variable having a value of 1 if the sex of a household head is male or 2 otherwise. It is known that most of the Ethiopian rural households are male-headed except the male household head dies or loses functionality due to old age. (Negatu, 2008) showed that cultural and socio - economic expectations in rural areas often have a significant negative effect on women and children's nutritional status, leaving them vulnerable to social classes. (Deressa & Sharma, 2014; Tsehay & Bauer, 2012) argued that if the household head is female the probability of being poor is higher so the household head being female is positively correlated with the risk of being poor. Therefore, this variable will expect to have a negative correlated with the poverty of Ethiopian household.

Dependency Ratio and Poverty

It is a continuous variable measured by the percentage of the dependent in a household. In the poor family there is a tendency of experiencing high dependency ratio (World Bank, 2020). This variable projected to have positive association with poverty.

Education and Poverty

It is a categorical variable equaling 0 to only read and write1to 1st grade complete 2 to 2nd grade complete 3 to 3rd grade complete 4 to 4th grade complete 5 to 5th grade complete 6 to 6th grade complete 7 to 7th grade complete 11 to 11th grade complete 12 to 12th grade complete 13 to certificate 14 to teacher training certificate 15 to 1st year college complete 16 to 2nd year college complete 17 to diploma 18 to 3rd year university 22 to new curriculum 10th grade complete 23 to new curriculum 11th grade complete 24 to new curriculum 12th grade complete25 to new curriculum certificate

(10+1)- technical/vocational 26 to new curriculum certificate (10+2)- level 2 incomplete 27 to new curriculum certificate (10+2) complete 28 to new curriculum certificate (10+3) level 3 one year complete 29 to new curriculum certificate (10+3) level 3 two years complete 33 to 3rd year college complete 34 to 1st degree or level 4 complete 35 to above 1st degree / level 4 93 to informal education /basic education 94 to adult education 95 to alternative education 96 to non-regular 98 to illiterate. Year of schooling of the household head is measured in years of schooling of the household head. Education also tended to alleviate poverty and improve the quality of life of the poor, (World Bank, 2016). Education has a strong correlation and significant use for both urban and rural society livelihood. As well completion of informal education shows a substantial rise in use, suggesting that investment in adult education can also bring benefits in Ethiopia, (FDRE, 2018). This variable is also projected to have a positive impact on the welfare of Ethiopian households.

Family Size and Poverty

It is a continuous variable and refers to the total number of Household members who live in the same home. Here the total number of a household is converted into the standard adult equivalent unit. From the survey of HCES 2016 the household poor in urban area has an average of 5.2 family size and rural area has an average of 6.1 family size, the non-poor household size in both urban and rural are most likely less than the number of poor household size, which is 3.5 and 4.6 in Ethiopia, (World Bank, 2020). Therefore, this variable will expect to have a negative effect on the welfare of Ethiopian households.

Non- Farm Activity and Poverty

This is a dummy variable if the household incur income from non-farm activity1 if not 2. (Muktar, *et al*., 2013)show in their study conducted in Dembel district, the practice of non- farm opportunities showed that significant impact on better livelihood of rural household and point out that the practice of non-farm activity is one of the most important factor in explaining consumption and poverty . Hence, non -farm income will be expected to positively affect the welfare specially Ethiopian rural households.

Ownership of House and Poverty

This is a categorical variable 4 to privately owned 3 to Free of rent 2 to Rented 1 to other (specify). The more the household experience the ownership of asset the less the probability for the exposure of poverty, (Hill & Tsehaye, 2014). Hence, ownership of house expected to have positive effect on welfare of both Ethiopian household. In other word this variable expected to have negative relation with poverty.

Occupation of Household Head and Poverty

It is a categorical variable equalize 1toPrivate Company 2 to Private Individual 3toGovernment 4to State-Owned Enterprise 5 to Public Works Program 6 to Religious Organization 7 to Political Party 8 to Other (Specify). The household head whose occupation on trade is more likely to be out of poverty; and the one who work in social service less likely to be poor related to household head in public administration worker and agriculture, (Daniel, 2018). This variable projected to have positive effect on the welfare of urban household descending from number one up to eight.

Shock and Poverty

It is a dummy variable having a value of 1 if the household experience shock, 2 if the household doesn't experience shock otherwise. Dercon, (2004) mentioned that the household who face shock is more exposed to poverty.so shock expected to have negative relation with poverty**.**

1.5. Significance of the Study

This study generated empirical data and relevant information on the determinant of poverty dynamics in Ethiopia. Besides, the results are useful for academics and practitioners, policy designers and makers to obtain firsthand experience on the particular topic, which they can use as a spring- board for further studies. Studies on the determinants of poverty dynamics mostly define household poverty in three categories: chronic poor, transient poor, and non-poor or never poor. The distinction between chronic and transient poverty is not only important for the perspective of poverty measurement accuracy, but also has policy implication purposes. Either chronic or transient poverty would call for different alleviation strategies. In a nation or area where the issue of poverty is marked by chronic poverty, the best strategy will be to redistribute

properties, and provide basic physical and human capital resources. Therefore, the study helps as a source of information for conducting further scientific research and can encourage the actors by providing crucial information. The study can also serve as a reference material for academicians, government bodies, researchers and to all who are interested to pursue further investigation on similar and related topics.

1.6. Scope of the Study

This thesis took measurements or conducted with the panel data of Ethiopian socio-economic survey within a scope of both rural and urban area of Ethiopia with the population size of 114,963,588 at a sample size of selected household is different in each waves. The study used the recent year serious data or waves; the study bound in Ethiopia as independent nation it is convenient to give policy direction and to show the study in a similar level from different reign of the country and the problems that arise within a country more significant to bound in nation and include both urban and rural households to give equal opportunity and focus for all types of community. The data or surveys analyze with econometrical models and indicate the determinant of poverty dynamics.

1.7. Limitations of the Study

The limitations in connection with method of analysis are that there is no baseline data and also rural and urban poverty is a function of multitude of factors. In this study, only variables, considered to significantly affect the incidence of poverty are included.

1.8. Organization of the Study

The thesis organized into six chapters. Chapter one is the introduction part which contain statement of the problem, objective of the study, significance of the study, scope of the study, research questions, limitation of the study and organization of the study. Chapter two presented the theoretical reflection and the conceptual framework of the research. This outlines poverty dynamics through theoretical concepts and definitions, going deeply the chronic and transient poverty with the empirical results in determinants of poverty. Chapter three described methodologies pursued, in identifying sample

households, data collection and analysis. It also gave brief account of analytical framework. Chapter four provided description of the study variables. It summarized the demographic variables, socio-economic variables and government assistance. Chapter five discussed about the findings of the study and econometric model analysis of the determinants of poverty dynamics respectively. Finally, a number of concluding remarks are set out in Chapter six which is conclusion and recommendation.

2. CHAPTER TWO: REVIEW OF RELATED LITERATURE

This chapter addressed the basic concepts; the theoretical, methodological, conceptual and empirical literature on poverty dynamics.

2.1. Theoretical Framework Poverty Dynamics

2.1.1. The need for studying poverty dynamics

To see the need for studying poverty dynamics it is important to see some theoretical explanations of poverty and its measurement. Table 2.1 will show definition of poverty, poverty line and poverty dynamics briefly.

Table2.1 Theoretical concepts of poverty

Poverty	Is a critical threshold of income, consumption, or, more generally, access to goods and services below which individuals are declared to be poor (Ray D., 1998). according to income- consumption pattern; insufficient income to buy a minimum basket of goods and service; according to socio economic and psychological well-being it is a lack of material well-being, ,insecurity, low self-confidence, live to survive with no long term plan, social isolation and lack of freedom of choice and action (Narayan, 2000)
Poverty line	A line that shows consumption per adult of the specific households equal to $1.90 dollar per day. And a minimum level of "acceptable" economic Participation in a given society at a given point in time (Ray D., 1998).
Poverty dynamics	It is the household or individual movement of in and out of poverty, once poor may become non poor and once non poor may become poor and some others stay in poverty for a longer time span and some others never been in poverty. Poverty dynamics refer this dynamism (Krishna, 2007).

Amartya Sen (1983), emphasized that poverty is not just relative, but also absolute. He defined poverty as a failure to achieve certain minimum capabilities and, according to him; the lack of capabilities is absolute. However, capabilities are not fixed over time or over societies. 'Absolute' in Sen's definition means that there is a threshold in capabilities after which functioning within the society is no longer possible. He criticized Townsend's relative definition in that it did not make an explicit distinction between the different spaces (or dimensions) in which the definition of poverty should be based (Sen 1985).

Poverty description and analysis issues have been widely explored in the development literature (Ravallion 1992; Lipton & Ravallion 1995). Poverty for a person or a household in a narrow context is characterized as the amount of income or consumption below a certain level, generally known as the poverty line. The indicator of welfare is total income or consumption. There are a series of methodological and analytical challenges inherent in interpreting the measurement of income or consumption of poverty (Ravallion 1998), but in practice researchers use these measures as convenient measures of welfare or utility. The above literatures explain poverty but poverty dynamics has different concept from poverty it refers to intra- or inter-annual changes in welfare that cause individuals or households to cross a fixed, but essentially arbitrary, poverty line from one time period to the next (Andrew & Brunt, Julia (2013)). The poverty dynamics literature is distinct from other types of poverty literature statics, poverty analysis, and poverty trends. The distinction is based on the data used in each types of analysis. Static poverty analysis is based on data from a single cross section households or individuals and poverty trends are based series of such cross sectional data. In contrast poverty dynamics is based on longitudinal data which tracks the same households or individuals over time. Generally poverty dynamics focus on inter-temporal change in poverty of specific households or individuals (Yaqub, 2000).

Until the late 1980s, the major aspects of the poverty study were poverty rates, seasonality, and timing of encounters and historical account of poverty. Poverty trends usually contrast poverty levels across a population at two (or more) different periods. However, comparing poverty rates in this way does not tell us whether individuals or

households are chronic poor or whether they are transient poor. (Hulme & Shepherd, 2003).Since the late 1980s, there has been growing interest in examining the duration of poverty.

Hojman, Daniel & Kast (2009) adhered to the view that individuals may transient in and out of a static poverty condition. This has a number of advantages. First, from a conceptual point of view, we exclude identifying a poverty area that might be difficult to justify, and also in comparison to the ontology of poverty status. Second, any static poverty measure causes a grouping of people used at a specific point in time to determine those that are dispossessed. This classification is also used in practice in order to target policies, strategies and programs. The introduction of a "dynamic" path-based definition of poverty would inevitably lead to inconsistencies in relation to that classification.

Yaqub, (2000) explained that the poverty trends literature can add some dynamism to its analysis through time series and “comparative statics” methods, but poverty trend focus on inter temporal changes in aggregate poverty of countries (or sub groups thereof) in which households or individuals remain anonymous whether the poverty trend is up or down nothing direct about the dynamics of whether those people or household that were poor now. Only poverty dynamics directly captures the economic mobility of households or individuals by attempting to measure their well-being at different point in time.

Economists initially led the way through studies of transitory and chronic poverty, poverty dynamics and patterns of poverty spells (Gaiha, 1988). Part of the exercise of poverty dynamics is to explore how these conditions affect the prevalence of poverty. It is useful for policy purposes, but also for recognizing the causal factors, to differentiate between chronic and transient poverty. Chronic poverty has usually been measured in two ways: a spell-based approach help to analyze transitions, in and out of poverty, and a component approach that aims to separate a chronic component of poverty from transient poverty (Hulme & Shepherd 2003). Empirical studies focused on the complexities of poverty have been comparative few in the literature of development economics. Bane and Ellwood (1983) looked into approaches that were used early on to analyses the dynamics of poverty. They categorized the methods into statistical methods ‘which

model the level of some variable such as income, allowing for complex lag or error structure; methods using spell durations and exit probabilities and tabulations of the event (poverty) over some fixed timeframe'.

2.1.2. Definition of Chronic Poor and Transitional Poor

Davis & Baulch (2011) pointed that the distinguishing feature of chronic poverty is extended duration in absolute poverty. The severity or chronic level of the poverty described in terms of several measures. (e.g. consumption, wages, etc.) but may also be defined in terms of the broader subjective facets of deprivation. This is separate from the transient poor, who switch in and out of poverty, or only rarely drop below the poverty line. The criteria to classified an individual or household in to chronic poor and transient poor is trend of staying under poverty line and the fluctuation of being under poverty line in some span and out of poverty line in other time.

Chronic poverty generally refers to the condition that the spending on consumption or household income for each span is still below the poverty line. Transient poor refers to that the spending (consumption expenditure) or the income of household is not always below the poverty line but is sometimes over the line. Generally it is characterized the household or individual who is not always under poverty line. Non-poor (never poor) refers to the consumption, expenditure or household income level is always above the poverty line in all periods. Individual or household who has not experienced the income and consumption expenditure below poverty line is categorized here (Hulme, Moore & Shepherd, 2001).

Jalan & Ravallion (2000) laid out two criteria for a household to encounter temporary poverty. First, it must be found that the household is poor for at least one day in a specific period of time for which records are available. Second, the quality of life of a household or individual must vary with time. They then suggest a classification of overall poverty into chronic poverty and transient poverty. McKay & Lawson (2003) analyzed evidence of chronic and transient poverty and observed that several studies concluded that transient poverty tends to be much more prevalent than chronic poverty. McCulloch & Calandrino (2003) Considered the period a person has been in poverty to

show the chronic existence of poverty. (Jalan & Ravallion 2000; Haddad & Ahmed 2003) used the projected income over a span of time as a measure of chronic poverty. And, argued that transient poverty is the most important because it implies the fluctuation and the cause of complexity of poverty. One who is poor in the first span of time becomes non poor and vice versa.

2.2. Methodological and Analytical Frameworks

2.2.1. Measurements of Poverty Dynamics

Rodgers & Rodgers (1993) gave the following example which is quite illuminating for understanding the difference between chronic and transient poverty.

Example1. Let us suppose that the poverty line is z = 200.

Table 2.2 example of poverty trend

Person	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
A	400	400	400	199	199	400
B	201	201	201	110	110	201
C	400	400	199	199	199	400

If we measure the duration of poverty spells, person C has the longest poverty spell compared to A and B. But if we suppose that a person can smooth his income over the years, spare money and transfer money to the next period, then clearly person B is in a state of chronic poverty. Consider the linear decomposable poverty index and the duration of time T. The most common choice is the FGT index. First compute that index for every period and note it Pt for a given poverty line zt. Then it gives the following definitions of average, chronic and transitory poverty rates:

1. Average annual poverty rate. It is known as a weighted total number of annual poverty measures. Most of the time the weights (ω_t) are equal to 1/T). This following will be true since the index P is linearly decomposable.

   $\mathbf{A_P\ (T) = \sum_{t=1}^{T} \omega_t P_t}$

   There is no possible inter year income transfers. This is, in a way, the highest poverty rate as reported in Hill & Jenkins (2001)

2. Chronic poverty. Let's assume that it is possible to transfer income from one year to the other year. Let Y_i^* the permanent income of person i. There are n individuals in the sample. Therefore chronic poverty is refer as a poverty index applied to the series of the n smoothed incomes:

   $\mathbf{C_P\ (T) = P\ (Y_1^*, \cdots, Y_n^*).}$

   Rodgers and Rodgers (1993) have a complicated way of computing the permanent income. Hill & Jenkins (2001) and Kuchler & Goebel (2003) used a much simpler formula.

3. Transitory poverty. As the poverty index P is expected to be linearly decomposable, transitory poverty can be found using a difference between Average annual poverty rate and chronic poverty.

   $\mathbf{T_P\ (T) = A_P\ (T) - C_P\ (T).}$

A positive TP (T) reflects the sum of poverty that is not chronic over the average year. According to Rodgers & Rodgers (1993), negative values are possible based on the chosen P and the manner in which permanent income is measured.

In recent years the most common way of measurement of poverty dynamics is the one (Hulme & Shepherd 2003) come up with Chronic poverty has generally been assessed in two ways, the spells approach focusing on transitions in and out of poverty,(Jalan & Ravallion, 1998) the components approach, which tries to isolate the permanent component of poverty from transitory poverty. The spells method described chronic poverty according to how many times (or how long) a household or individual has been under poverty line for a specified period of time. For example, a household may be described as in chronic poverty if it is under poverty line in at least two out of three ESS (Ethiopian socio-economic survey) waves.

The component method includes estimating the chronic and transitory elements of some indicator of permanent welfare. The fluctuating nature of household welfare over time is thought of as containing both a transitory component and a permanent component. The transitory component is generated by variability in household consumption levels, while the permanent component gives the poverty level if consumption does not stray from its average value. For the dynamics of poverty to categorized chronic poor, transient poor and non-poor it is important to apply model that can compute the measurement of poverty dynamics with respect to staffing the model assumptions.

2.3. Empirical Studies of Chronic Poor and Transitional Poor in Ethiopia.

The households who live in chronic poverty and transitional poverty have different characteristics in terms of various aspects. (World Bank 2020) The long-term poverty in Ethiopia is transient, based on panel data of ESS empirical studies, but there are notable proportions of households stuck in chronic poverty. During the 2012-2014-2016 period, about 16 percent of the Ethiopian population was chronically poor in rural areas and small towns. Just under one third experienced transitory poverty between 2012 and 2016. Taken together, between 2012 and 2016, nearly half the population endured at least one spell of poverty, reflecting the high degree of heterogeneity in consumption and exposure to risk in rural Ethiopia. Chronic poverty is primarily concentrated in the SNNPR, while in Amhara, transitional poverty is highest. Relative to the transitory poor, the chronic poor have larger households and dependency rates, less land and fewer assets, and less education.

In rural part of Ethiopia rainfall shock has highest significance on the dynamism of rural household poverty (Dercon, 2004). Road access has contributed to poverty reduction. Reduced distance to the closest small town by about 12 kilometers also decreases the risk of being chronically poor by about 38%. Better roads in the localities make it easier for households to access local market towns which are in turn linked to larger urban centers. And shocks positively affect poverty in rural Ethiopia, except the shock of death and illness all other shocks in rural area depend on the consistency of climate (Dercon, Hodinott, & woldehanna, 2008). Factors like age of household head and number of

children in rural households positively affect both transient and chronic poverty (Awel, 2008).In urban Ethiopia age of household head and dependency ratio found to be positively associated with poverty (Daniel, 2018).

Bigsten & Shimeles, (2004) concluded in their study, poverty is more persistent in urban areas than in rural areas in Ethiopia. The percentage of people who remained poor throughout the sample period in urban areas was double of rural areas. In rural areas, such factors as age of the head of the household, dependency ratio within the household greatly affect the odds of moving into poverty. Factors such as size of cultivated land, education of the head of the household, education of the wives, value of crop sales, type of crops planted, access to local markets significantly reduce vulnerability to poverty. In urban areas, household size, age of the head of the household, region of residence (particularly the capital) increase the probability of being in poverty.

Woldehanna a & Hagos, (2013) include and identify the highest school grade completed by the primary caregiver of the Young Lives child and the highest grade completed by the father to capture the effect of education on the dynamics of poverty in Ethiopia.

Seff & Jolliffe (2016) used the first two rounds of ESS data to investigate the dynamics of multidimensional poverty in Ethiopia. These dynamics are then compared to the dynamics of cash-metric (consumption expenditure) poverty. The authors found that there is very little correlation between those households at the bottom of the distribution of Multi-Dimensional Poverty (MDP) and those at the bottom of the distribution of money. MDP rates in the first two rounds of the ESS are much higher than consumption poverty rates, and changes in household consumption have a very weak relationship with changes in multidimensional well-being. Like the poverty dynamics multidimensional poverty doesn't have strong correlation. The rates of multidimensional poverty in the first two rounds of the ESS are far higher than the rates of consumption poverty, and changes in household consumption have a very low correlation to changes in multidimensional wellbeing. The study indicates that non-monetary measures of poverty are best suited to gathering shocks encountered by households compared to money-metric measures of well-being. For policymakers, this ensures that improvements in both money-metric and multidimensional welfare should be closely considered when designing programs. An overview of the factors influencing the transition to and from

multidimensional poverty indicates that the most important functions are educational variables, access to an enhanced water supply, and the potential to accumulate wealth.

Kafle, McGee *et al*. (2016) use the first two rounds of the ESS data to explore both consumption and asset-based poverty in Ethiopia. The analysis is restricted to rural areas and small towns. During the first round of the ESS, the writers placed the consumption poverty line at the 30th percentile of the demand distribution. This poverty line option is marginally higher than that used in this chapter. Analogously, the asset-dependent poverty line is derived based on the allocation of assets in the first round of the ESS. The study indicates that while cross-sectional indicators of consumption poverty have remained constant in both eras, there has been a great deal of economic mobility in and out of poverty. These significant movements in and out of poverty have not been expressed as significantly when an asset-based indicator of welfare is used. A more detailed expenditure trend investigation reveals that there has been a general change towards higher spending on comparatively more nutritious food items and away from staples. This paper's authors find the relationship that is the indicators of demand and asset-based poverty is essentially uncorrelated. Asset-based poverty rates, however, fell more steeply between the two rounds of the ESS than consumption poverty did.

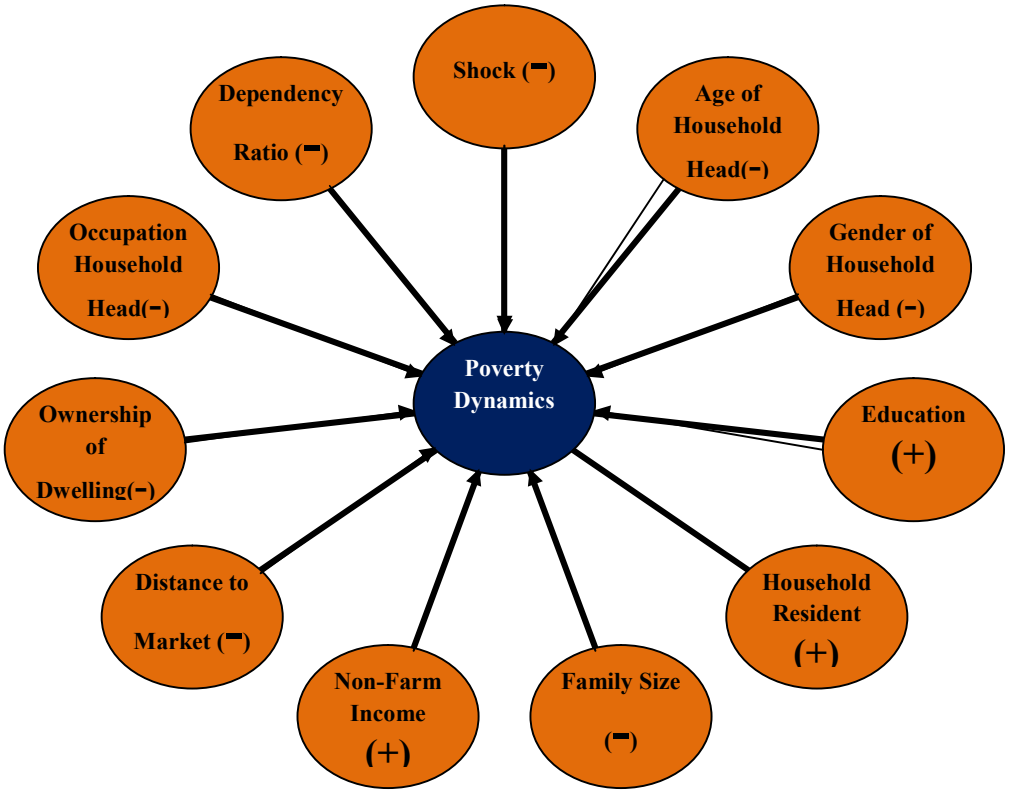
Table2.3 Poverty Head Count Index of Ethiopia

Area	Years				
	1995/6	1999/00	2004/05	2010/11	2015/16
Rural	47.5	45.4	39.3	30.4	25.6
Urban	33.2	36.9	35.1	25.7	14.8
National at national poverty line$0.67 or 19.70 birr	45.5	44.2	38.7	29.6	23.5
National poverty line at rate of $1.90	72.3	63.4	39.2	35.2	32.60

Source; world data atlas and World Bank, 2020

2.4. Conceptual Frame Work

Figure2.4 Conceptual Frame Work



Independent Variable

Dependent Variable

Source from World Bank 2014, 2016 and 2019

3. CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Data source

This study uses the three rounds of the Ethiopian Socioeconomic Survey (ESS) panel data. The ESS is a collaborative effort of the Central Statistical Agency of Ethiopia and the World Bank's Living Standards Measurement Study – Integrated Surveys of Agriculture program. The first wave of the survey (ESS1) covers only rural and small town areas and the second and third waves (ESS2 and ESS3) of the survey expanded to also include urban areas.

The urban supplement was done in such a way to ensure that the ESS data can provide nationally representative estimates.1 Thus ESS1, ESS2, and ESS3 together create a panel data set of households from rural and small town areas, whereas ESS2 and ESS3 together represent a panel of households and individuals for rural and all urban areas. Since the analysis of this study is based on a panel of households from all three surveys, the urban sample is automatically excluded. Therefore, the results are representative at the national level for rural and small town areas only. The ESS began in 2011 with 3776 rural and small-town households. Of these, ESS2 and ESS3 successfully re-interviewed 3699 households.

This implies a panel attrition rate of 2%, or a successful follow-up rate of 98%. The ESS used a stratified, two-stage sampling design, where the regions of Ethiopia served as the strata from which enumeration areas (EAs) were selected proportionally based on regional population size. Some observations were then excluded due to missing information on total annual consumption in any of the three rounds. Finally, measures of chronic poor, transit poor never poor, as well as determinant of poverty dynamics were constructed using a sample of 4,547 and 544 households from the four regions.

3.2. Setting Poverty Lines

This study uses the poverty lines constructed by the National Planning Commission (NPC) as reported in its 2017 poverty analysis interim report. The NPC used the cost of basic needs method, which is the most widely used method of estimating poverty lines.

In this method, first, the food poverty line is determined 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 meets the predetermined level of minimum caloric requirement. This bundle is valued at local prices or at national average prices if the objective is to get a consistent poverty line across regions and socio-economic groups. Then a specific allowance for the non-food goods consistent with the spending pattern of the poor is added to the food poverty line. To account for the non-food expenditure, the food poverty line is divided by the food share of the poorest quartile or quintile (NPC, 2017).

The method described above was first applied in the context of the 1995/96 Poverty Analysis Report. This was based on the cost of 2200 kcal per day per adult food consumption with an allowance for essential nonfood items. The food and total poverty lines used since 1995/96 in the country are 648 and 1075 birr at national average prices, respectively. The poverty line based on the 2010/11 Household Income and Consumption Expenditure Survey was set using the consumption groups (basket of goods) defined in 1995/96. This basket of goods, which provides 2200 kcal, was valued at 2010/11 national average prices in order to obtain food poverty line for 2010/11. This food poverty line was then divided by the food share of the poorest 25% of the population to arrive at the absolute poverty line for the year 2010/11. Accordingly, the food and absolute poverty lines for 2010/11 were determined to be Birr 1985 and 3781, respectively (NPC, 2017). The 2015/16 poverty line was set by applying the GDP deflator provided by the MoFED (2011-2016) to the poverty line figures set for the year 2010/11. The food poverty line for 2015/16 is computed to be Birr 3772 per year per adult person and the absolute poverty line is Birr 7184 per year per adult person (NPC, 2017).

Regional poverty lines were estimated by deflating the national food and absolute poverty lines for 2010/11 and 2015/16 using spatial price indices, which were also calculated by the NPC. These provided regional poverty lines relevant for the first and third waves of the ESS. To generate poverty lines for the second wave, the 2010/11 poverty lines were adjusted using regional consumer price indices to bring them to the December 2014 constant prices. This study uses the food poverty lines for each

household to analyze the nature of poverty and to find the determinant of poverty dynamics in Ethiopia.

3.3. Description of the Study Parameters

This study deployed the Ethiopian socio-economic survey (ESS) data of all the four waves i.e. the 2011/2012, 2013/2014, 2015/2016 and 2018/2019. The first wave of the series of the survey was focused on the rural areas in which about 3776 households were surveyed. The first wave of ESS was focused on the rural area but the second wave included the urban, to provide the national level of Ethiopian socio-economic issues. The second wave panel survey was planned to incorporate a total of 5469 households including those who participated in the first wave survey of which only 5262 households responded. Unlike the first wave panel survey, the second wave survey was conducted both in rural and urban areas. The third wave of ESS had the same sampled households with that of the second wave panel, but the response rate in the second wave was exhibited a slight decline compared to the second one. The fourth wave of ESS was not part of the preceding panel surveys rather it was the new base line survey for the coming surveys on wards.

The survey planned to interview 7,527 households and the total number of households interviewed was 6,770 with a respondent rate of 89.94 percent. The study deployed all the data sourced from the four waves. The second and the third wave data was utilized for the panel data ordinal logistic regression analysis because those surveys were conducted at a national level (both at urban and rural part of the country) whereas the fourth wave data was used for estimating the effect of the explanatory variable on poverty status based on ordinary least squared regression technique.

3.3.1. Demographic Variables

The following demographic variables from ESS that are believed to have influence in the poverty status of households were included in this study, Residents of the household, sex of the household head, age of household head, educational status of the household head, household size or number of household, distance from the market, and dependency ratio.

A resident of household: - a resident of households deals with the area in which the surveyed households live in i.e. urban, small towns or rural. Only sampled residents of rural and small towns were surveyed during the wave one survey, while urban residents were included in the next two surveys.

Sex of household head: - the sex of household head is about whether the household head's sex is female or male.

Age of household head:-shows the age of the household age hade during the survey period and helps to see the effect of household head age in the poverty dynamics

Educational status of household age: - shows the educational background of the household head. Used to see how the variation in the level of education accomplished by household hades influence the poverty status of the entire household.

Household size/number of household: - refers to the total number of individuals who live in the same household.

Distance from the market: - shows how far the household residents from the nearest market area.

Dependency ratio of household: - represents the percentage ratio of children under 14 years and an individual older than 65 years with the ratio of a number of individuals between the age of 14 and 65. In another word, it is the percentage ratio of the non-working age population to the working population.

3.3.2. Socio-economic Variables

Some selected socio-economic variables from ESS are included in this study for the sake of analyzing the determinant of poverty dynamics. Occupation of household head, ownership of household dwelling/house, non-farm business/activity, and shock are the selected socio-economic variables.

Occupation of household head: - shows in what type of occupation the household work is a private company, private individual, government office, state-owned enterprise, public work program, religious organization, political party, and others.

Non-farm business or activity: - it shows if the household has non-agricultural business even if the household's main working industry is agriculture or others.

Ownership of house/ dwelling: - it implies in what term the household owns its dwelling. Is it privately owned, free of rent, rented, or other?

Shock: -refers to the phenomena of something which happens unexpectedly and affects the household wellbeing negatively.

3.4. Data Analysis

Combinations of quantitative and qualitative methods used to analyze the data. However, the study based more on qualitative method complemented with quantitative data. Quantitative data analysis will be done using descriptive statistics and econometric models. To analysis the data statistically software like state 13 has been used.

3.4.1. Descriptive statistics

The basic features of the data described using descriptive statistics and Econometric models to analyze the data. Here simple descriptive statistical analysis such as mean, standard deviation, percentage and inferential statistics such as t-test and χ^2-test (Chi-square test) will be used to describe poverty status and characteristics.

3.4.2. Economics and Econometrics models

Economics model of poverty dynamics

Independent variables included in the model considers the data availability in the 2012,2014 and 2016 survey of ESS also variables used in the previous researches done by Jalan & Ravallion (1998), Yaqub, (2000), McCulloch & Calandrino (2003), Fields

et al. (2003), Haddad & Ahmed (2003), Bigsten & shimeles(2004), Kedir & McKay (2005) and Dartanto & Nurkholis, (2013). The ordered logit model is shown below:

y =HHC βi + SCE βj + shock βk + ei

Ordered Logistic Model

An empirical method of economic forecasting that uses an equation based on the statistical relationship among economic variables. In statistics, the ordered logit model (also ordered logistic regression or proportional odds model) is an ordinal regression model—that is, a regression model for ordinal dependent variables first considered by Peter McCullagh(2003) and the purpose of the analysis is to see how well that response can be predicted by the responses to other questions, some of which may be quantitative, then ordered logistic regression may be used. It can be thought of as an extension of the logistic regression model that applies to dichotomous dependent variables, allowing for more than two (ordered) response categories.

In this study, Ordered Logit Model to examine the determinant factors that can affect the poverty status of households. We also ascertain the important factors that enable the poor to escape from poverty. The ordered logit model is useful for understanding the relative effect of different household characteristics on their poverty status, but it is less useful for distinguishing between poverty categories.

The Ordered Logit model is specified as: $y=\beta x_i + e_i$ *e, x Normal (0,1)*

Where β_i :unknown parameter, e error term, x_i household character*(* age, sex, education attainment, number of household members, dependency ratio*),* socio-economic characteristics(occupation of household, house ownership, distance from the market, non-farm activity), shocks, risks and policy variables received by a household it may will includes positive and negative shock.

$$P_i = \frac{1}{1 + e^{-(\alpha + \sum \beta_i X_i)} - xi}$$

yi=1

$$P_i = \frac{1}{1 + e^{-(\alpha + \sum \beta_i X_i)} - xi} \qquad \text{yi=2}$$

$$P_i = \frac{1}{1 + e^{-(\alpha + \sum \beta_i X_i) - xi}} \qquad \text{yi=3}$$

$$P_i = \frac{1}{1 + e^{-(\alpha + \sum \beta_i X_i) - xi} - xi} \qquad \text{yi=4}$$

Where: *y* = a household poverty status: 1 = poor, 2 = transient poor (-), 3 = transient poor (+), 4 = non-poor. The logistic distribution function is similar to the normal distribution function but has a much simpler form. The ordered logit model is estimated using two sample groups: Although the analysis of poverty dynamics focuses on the national level, separating the sample helps to show the consistency and robustness of estimation results. This also checks whether there are significant differences of poverty characteristics between rural and urban.

3.4.3. Analysis approach and control variable

The analysis use the spell approach to compute the categories of poverty dynamics due to the reason of first, the spell approach is easy to compute and explain second, the compound approach need a long term panel data also only describe either the household is chronic poor nor transient poor but the spell approach used to compute short time panel data and describe transient poor (Hulme, Moore & Shepherd, 2001; Hulme & Shepherd, 2003).

The approach used to measure the poverty is monetary approach. The monetary approach to measuring poverty is the most commonly used. It uses calculations of household income (including own production and expenditures per capita) to identify a shortfall in consumption (or income) from a specified poverty line (Ludi & Bird 2007). Consumption and income is a control variable.

3.5. Scale Reliability and Validity

This study is designed following the standard procedures/outlines of a scientific research. Moreover, there is strong collaboration with officials and experts of concerned government offices, as the need arise, basically to ensure the validity of the data and thereby the reliability of the result. The result of the study planned to be published on relevant scientific journals.

4. CHAPTER FOUR: RESULTS

This chapter of the study consists of two sections. The first section of the chapter presented the dynamics of poverty and the poverty status of the surveyed households. The second section presented the finding of determinants of poverty dynamics.

4.1. Poverty Dynamics and Its Proportion

4.1.1. Poverty Trend of Ethiopia

Before describing the poverty dynamics, the study intended to show what the level of poverty status of household looks like using all the four waves of ESS data (the 2012, 2014, 2016 and 2019) through descriptive statistics. The descriptive statistics result helped to give an overview of variation in the poverty status of households overtime along the four waves of panel study periods.

Table4.1.1: poverty status on 2012, 2014, 2016 and 2019

Year	poverty status				Total	
	Non-poor		Poor			
	Frequency	Percent	Frequency	Percent	Frequency	Percent
2012	767	20.02	3065	79.98	3832	100
2014	1667	32.87	3404	67.13	5071	100
2016	1777	37.67	2940	62.33	4717	100
2018	5716	84.43	1054	15.57	6770	100

Source: ESS 2012, 2014, 2016 and 2019 own calculation

From the total of 3,832 surveyed households during the wave 1 (2012 panel survey), about 79.98 percent of the households were rated as poor with the frequency of 3,065 while the remaining 20.02 percent of the households were non-poor with the frequency of 767. The descriptive statistics result revealed that out of the total 5,071 surveyed households during the wave 2 panel studies in 2014 about 67.13 percent (3,404) found to be poor and the rest 32.89 percent of the surveyed households which accounts to the 1,667 of the households categorized as non-poor. In the other hound out of the total 4,717 households included during the 2016 panel survey which is the third wave 62.33

percent of them (2,940) were identified as poor while the remaining 37.67 percent (1,777) of them were the poor non-poor one. Finally regarding the fourth wave panel survey data conducted in 2019 only 15.57 percent (1,054) of the surveyed households were found to be poor and the majority 84.43 percent, (5,716) of the households were non-poor out of the total 6,770 surveyed households. From the overall finding of the descriptive statistics analysis, the number of poor households exhibited a declining trend along the survey periods. The result indicated that a significant transition from the poor to the non-poor overtime. However, a sky rocketing change in the number of non-poor households was registered during the fourth wave panel survey of the 2019. It might be due to the fact that the sampled households were not similar with that of the preceding three panel surveys.

4.1.2. Poverty Dynamics of Ethiopia

To describe poverty dynamics in Ethiopia, the study used the panel data of ESS of wave 1, wave 2, and wave 3 which were conducted during the year 2012, 2014 and 2016, respectively. The wave 4 panel data of the 2019 ESS was excluded from the analysis as it was not part of the preceding three wave panel survey rather it was the new base line panel survey. In this analysis, the surveyed households were categorized in to four. Accordingly the study categorized those who found to be non-poor in all the three waves was categorized as never poor, who experienced poverty in one of the waves as once poor, who experienced poverty in two of the three waves while those households who remained poor in all the three waves surveys as always poor.

Table4.1.2: poverty status on 2012, 2014, and 2016

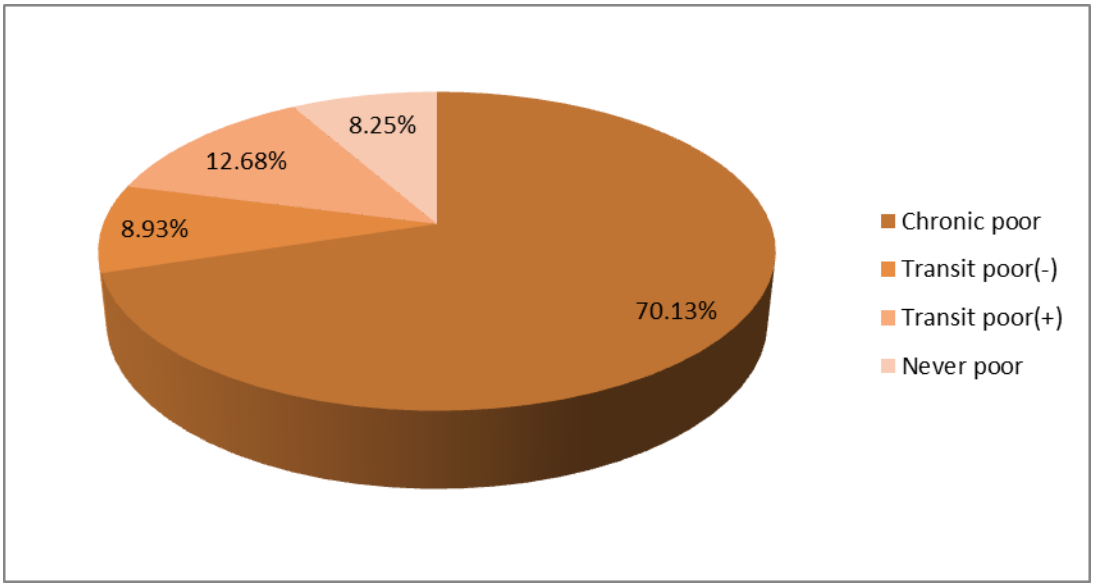
Poverty status	Frequency	Percent
Never poor	**139**	**4.84**
once poor	**302**	**10.53**
Twice poor	**739**	**25.76**
Always poor	**1689**	**58.87**
Total	**2869**	**100**

Source: ESS 2012, 2014, and 2016 own calculation

The findings regarding the poverty dynamics of the country based on the three waves paneled survey data revealed that from the total observation of 2,869 households, the majority of the surveyed households which are about 58.87 percent (1,689) households fall under the category of always poor as they were found to be poor din all the three wave surveys. Followed were those twice poor accounting for about 25.76 percent (739) of the surveyed households representing those who were found poor in two of the three waves surveys. Only 10.53 percent (302) households were found poor once or experienced poverty in one of the three waves surveys while the remaining 4.84 percent (139) of the surveyed households remained non-poor and fall under the never poor category. The findings of the analysis of the poverty dynamics revealed that larger proportion (95 percent) of the surveyed households experienced poverty at least during one of the three waves surveys conducted in 2012, 2014 and 2016 whereas only 5 percent of the surveyed households remained non-poor in all the three surveys. Considering once poor and twice poor category as transient poor, the proportion of chronic poor was higher and the analysis didn't show transient poor(+) or transient poor (-). Therefore, in order to present the incidence of transient poverty only the two wave's' survey data (2012 and 2014) will be deployed next.

In this regard to see the proportion of poverty dynamics or the poverty transition, the study categorized households in to chronic poor, transient poor (+) and transient poor (-). Accordingly those households who never made it out of poverty during the survey or remained poor in the two waves survey periods considered as chronic poor, who escaped from poverty in the 2014 panel survey while they were poor during the 2012 panel survey period as considered as transient poor (+) and those how became poor in the 2014 panel survey period while they were non-poor during the 2014 panel survey are considered as transient poor (-). Therefore, in order to calculate this proportion, the study uses ESS's wave1 and wave1 survey data with the total panel household number of 3,777 and the combined surveyed households of wave2 and wave3 was 4,954 in number.

Figure 4.1.2.1: poverty dynamics at year of 2012 and 2014



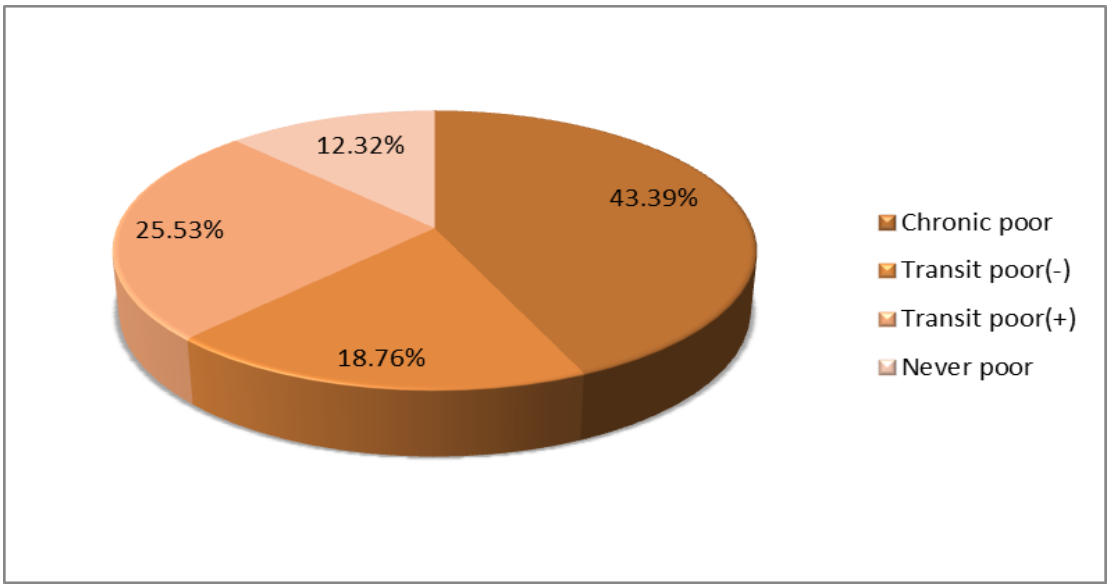
Source: ESS 2012 and 2014 own calculation

As depicted in figure 4.3.2.1 below, the majority of the surveyed rural households which are about 70.13 percent (2,184) were chronic poor meaning remained poor both during the wave 2 (2012) and wave 3 (2014) panel surveys followed by those transient poor (+) or the households who were poor during the wave1 survey period and escaped from poverty during the wave2 survey period with 12.68 percent(395) share from the total while only 8.93 percent(278) of the households were found to be under transient poor(-) category implying that those households became poor in the wave 3 survey while they were non-poor in the preceding surveys. Finally those who never experienced poverty both during the 2012 and 2014 survey period accounted only about 8.25 percent (257) of the surveyed households. The findings revealed that the higher proportion of the surveyed sampled households were chronic poor or experienced severe poverty indicating that most of the society is in chronic poor during the two panel surveys from the panel data of ESS wave 1 and wave 2 with 3114 total observation. As mentioned in the description of the study in chapter 4, section one, the ESS wave 1 is concentrated in a rural area and when the integrated household is selected from wave 1 and wave 2 the household residents are more like from the rural area so graph 4.3.1 shows the poverty dynamics of rural Ethiopia. With this regard in a rural part of Ethiopia, chronic poor is

very high and the proportion of never poor is very low which implies most of the households are either chronic or transient poor.

To analyzses the dynamics of poverty in Ethiopia it is necessary to consider both rural and urban. The study used ESS of wave 2 of 2012 and wave 3, 2014 of the panel because wave 1 and wave 2 included both rural and urban part of Ethiopia and the survey conducted to provide national socio-economic data..

Figure 4.1.2.2: poverty dynamics at year of 2014 and 2016



Source: ESS 2014 and 2016 own calculation

Regarding the poverty dynamics at national level (rural and urban), the result in figure 4.3.2.2 indicated that from the total sampled households of 4,547, the higher proportion of the surveyed sample households about 43.39 percent (1,973) were chronic poor meaning poor both during the 2014 and 2016 panel surveys followed by those who were transient poor (+) or who were poor in 2014 and became non-poor in 2016 with 25.53 percentage share (1,161). In the other hand about 18.76 percent (853) of the surveyed households were found to be transient poor(-) representing those who fall in to poverty in 2016 while they were non-poor in 2014and the remaining 12.32 percent of them(560) were identified as never experienced poverty both in the two survey periods. The transient poor include both transient poor(-)and transient poor(+) and the proportion of

transient poor households is slightly higher than that of chronic poor which is 44.29 percent of transient poor and 43.39 percent of chronic poor. However, the result confirmed that the larger proportion of the society experience poverty either in the form of chronic poor or transient poor. But from the figure above one can learn that though the transient poor are higher in number than chronic poor out of those categorized as transient poor the proportion of transient poor (+) or who escaped from poverty in 2016 was higher than that of transient poor (-) which is a better result. Considering this result, the next section made an attempt to identify the determinant of poverty dynamics. Therefore, based on regression analysis the degree and magnitude of effect of the predicting variables on poverty will be estimated in the next section.

4.2. The Determinant of Poverty Dynamics in Ethiopia

In order to examine the determinant of poverty dynamics, the study deployed various demographic and socio-economic variables from the three wave panel surveys (2012, 2013, and 2016). To identify the determinant of the poverty dynamics, the study in rural part of Ethiopia employed the ESS panel survey data of wave 1, wave 2 and wave 3 which were conducted in 2012, 2014 and 2016, respectively. On the other hand in order to determine the determinants of the poverty dynamics in urban Ethiopia, the study deployed the ESS panel survey data of wave 2 and wave 3 which were conducted in 2014 and 2016, respectively. The 2012 panel survey was excluded from the urban poverty analysis as it was conducted only in the rural part of the country. Therefore, the study tends to explain the determinant of poverty dynamics at the national level based on the urban and rural poverty analysis together.

Rural household poverty dynamics and its determinant

To examine the determinant of poverty dynamics of rural households several demographic and socio-economic factors were considered. The change of the parameters is exponential for this reason to show the effect of those variables on poverty dynamics of the rural Ethiopia, the study employed the ordinal logistic regression model. This model helps to show the likelihood of the household being poor due to the change in a

given variable. The data deployed was panel of 2012 wave1, 2014wave2 and 2016 wave3 of ESS.

Table4.4.1 determinant of poverty dynamics 2012, 2014 and 2016 rural

poverty status	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Distance from the market	-0.0075011	0.0019263	-3.89	0.000	-0.0112765	-0.0037257
Household head sex	0.0021506	0.1388589	0.02	0.988	-0.2700078	0.274309
Household head age	0.0179608	0.0051045	3.52	0.000	0.0079562	0.0279655
Household head Education status	0.0379429	0.0139239	2.73	0.006	0.0106526	0.0652332
Number of household	-0.2133013	0.0358962	-5.94	0.000	-0.2836566	-0.1429461
Occupation of household head	-0.4248791	0.045856	-9.27	0.000	-0.5147552	-0.335003
Ownership of house	0.2221244	0.0802283	2.77	0.006	0.0648797	0.379369
Non-farm activity	-0.4239825	0.131853	-3.22	0.000	-0.6824096	-0.1655554
Shock	-0.4282497	0.4216173	-1.02	0.31	-1.254604	0.3981049
Dependency ratio	-0.0177749	0.0074487	-2.39	0.017	-0.0323741	-0.0031757

Source: ESS 2012, 2014, and 2016 own analysis result

As presented in the above table all the predicting variables have statistically significant effect on the dependent variables except gender of household head and shock. This implies that either the variation in the gender of household head or the occurrence of shock didn't have any significant effect on the poverty status of rural households. In other word the household likelihood of being poor or non-poor are not determined by the change in household head sex or the experience of shock.

From the analysis, the magnitude of the estimated elasticity coefficient showed the degree of the effect of the given independent variable on the dependent variable or

poverty status of rural households in our case, while the sign of the coefficient the direction of the effect i.e. positive or negative. Regarding the household resident distance from the market, the result indicated that this variable has a negative and statistically significant effect on poverty status of rural households with beta coefficient of -0.008 at 1 percent level of significant (P-value<.000). The result can be interpreted as the longer the distance from the market the poorer the household to be kilometer distance from the market results 0.008 probabilities the household to become poor. The result indicated that age of the household hade a 0.18 percent positive and statistically significant effect on poverty status of rural households at 1 percent significant level. The interpretation is that as age of the household head increases by one year the probability of the household to become non-poor or out of poverty increases by 0.18 meaning the older the household get the less exposed to poverty.

Educational status of the household head also found to have relatively strong positive and statistically significant effect on poverty status of rural households at 1 percent level of significance. Therefore, a one level increase in education status of the household head has the probability of 0.38 to put the household out of poverty. Meaning the more the household head educated the less the household to be poor. An increase in the number of households by one person has a 0.213 probability of the household becoming poor. The household who is working in a private company or private individual is less exposed to poverty than the household who work in public program and estate owned enterprises so from the category of occupation an increase from category 1 to category 2 there is a probability of 0.424 the household would fall to poverty. Asset ownership of household implied by the ownership of house or dwelling and categorized in ownership terms the household who is own their house by rent or other specific terms are more likely is expose to poverty compared to the one who lives in free rent and private-owned with the probability of 0.22 becoming poor.

The household that doesn't have a non-farm business is more exposed to be poor with the probability of 0.42. And the household that has the highest dependency ratio is also exposed to poverty, an increase of one unit in dependency ratio have a 0.02 probability of the household to be poor. Ethiopian rural household's panel data of three waves and

effects of variables which make the house hold to become poor and non-poor are described above so the household poverty status is dynamics because of the change in those variables.

Urban household poverty dynamics and its determinant

The urban household expected to have some difference from rural household relationship on the given variable and poverty status. The data is panel data of 2014 wave 2 and 2016 wave 3 of ESS With the difference the life style of between from rural households, some variation is expected regarding the effect of the included explanatory variables on poverty status of urban households compared to rural households. The panel data of 2014 wave 2 and 2016 wave 3 of ESS were deployed for urban poverty analysis.

Table4.4.2 determinant of poverty dynamics 2014 and 2916 urban

poverty status	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Distance from the market	-0.0096957	0.002264	-4.28	0.000	-0.0141331	-0.0052584
Household head sex	-0.1544902	0.1617016	-0.96	0.339	-0.4714195	0.1624392
Household head age	0.0059391	0.0071099	0.84	0.404	-0.0079959	0.0198742
Household head Education status	-0.0032922	0.0062302	-0.53	0.597	-0.0155031	0.0089187
Number of household	-0.2547421	0.0372973	-6.83	0.000	-0.3278434	-0.1816408
Occupation of household head	-0.3610539	0.0501149	-7.2	0.000	-0.4592774	-0.2628304
Ownership of house	0.2067982	0.0950511	2.18	0.030	0.0205016	0.3930949
Non-farm activity	-0.2874422	0.1539083	-1.87	0.062	-0.5890969	0.0142124
shock	-0.4493758	0.5071376	-0.89	0.376	-1.443347	0.5445955
Dependency ratio	-0.0177107	0.00849	-2.09	0.037	-0.0343508	-0.0010705

Source: ESS 2014 and 2016 own analysis result

Similarly, like that of rural households, gender of household head and shock has no statistically significant effect on poverty status of urban households. Also age of household head, education status of household head and non-farm activity are not statistically significant.

From the analysis, the amount of coefficient showed the variable relationship with the poverty status of the household. Starting from household resident distance from the market the longer distance from the market exposed the household to be poor; kilometer distance from the market has 0.009 probabilities the household to become poor. An increase in the number of households by one person has a 0.25 probability of the household becoming poor. The household who is working in a private company or private individual is less exposed to poverty than the household who work in public program and estate owned enterprises so from the category of occupation, for an increase from category 1 to category 2 there is a probability of 0.36 the household would fall to poverty. Asset ownership of household implied by the ownership of house or dwelling and categorized in ownership terms the household who owned the house by rent or other specific terms are more likely to be exposed to poverty compared to the one who lives in free rent and private-owned house. And the probability of becoming poor is 0.21.

The household that has a large number of non-working age members or the higher the dependency ratio, the more the exposure for poverty. One number increase in the dependency ratio of the household has 0.02 probability the household would be poor. Ethiopian rural household poverty status effect through two waves of ESS showed that the determinant of poverty dynamics within the effect of the variables in the poverty status of different timing with a change of those variables which implies the dynamics and the probability of those variables show the households transition into poverty and out of poverty in a change of the given variables.

5. CHAPTER FIVE: DISCUSSION

5.1. Poverty Trend of Ethiopia

Ethiopia has achieved a remarkable success in reducing poverty in the last decade. According to the 2016 household consumption and expenditure survey result about 26.1 percent of households in Ethiopia were poor. As compared with the 2011 household consumption and expenditure survey result survey a 4.5 percent reduction in poverty was registered with in five years periods. According to the World Bank (2020) about 26 percent of the rural household were non-poor in 2012, 3.7 percent of the household in small towns were non-poor in 2016, and 3.9 percent of the urban household were non-poor in 2014. This indicates that proportion of the poor is high in urban areas as compared with that of urban rural areas.

The study used four years ESS panel data to analyze the poverty status of households. The surveys were conducted in 2012, 2014 2016 and 2019. The 2012 survey was conducted in rural areas and small towns and hence the data obtained in this survey was used to show the proportion of poor and non-poor in a rural area and small towns only. According to the study finding about 79.98 percent of the household were poor with the frequency of 3,065 while the remaining 20.02 percent of the household accounted to non-poor with the frequency of 767 out of the total observation of 3,832 households. This finding is consistent with the finding of the World Bank analysis of 2020. Specifically, the data analysis result of the wave2 survey which was conducted in 2014, about 67.13 percent of the households were identified as poor with the frequency of 3,404 households whereas the rest 32.87 percent of the households found to be non-poor with the frequency of 1,667 households of the total 5,071 observations. In the other hand the finding from the wave 3 survey of the 2016 about 62.33 percent of the surveyed households were poor with the frequency of 2,940 while 37.67 percent of the households identified being non-poor with the frequency of 1,777 out of the total 4,717 observations.

Finally the analysis finding of the wave 4 survey data of 2019 revealed that out of the total 6,770 observations 15.57 percent of the households were poor with the frequency of

1,054 and 84.43 percent of the household were non-poor with the frequency of 5,716. In general the study findings showed that the declining trend in the number of poor households over time. Moreover, the result of the 2019 survey data indicated higher decline in the number of poor households. The first three waves of ESS panel survey of 2012, 2014 and 2016 were conducted on the same sampled household while the 2019 survey used other sample households different from the previous three series panel surveys. Therefore, the higher fall in the number of poor households in 2019 might be due to the change in the sample of the households. However, the result of the analysis of the 2019 survey data regarding the proportion of poor and non-poor households is in agreement with the finding of (Eyasu, 2020) using the HICE survey data.

5.2. Poverty Dynamics of Ethiopia

The purpose of the poverty dynamics analysis is to show the proportion of households in chronic poverty and transient poverty. Bigsten A. & Shimeles A., (2004) conducted a poverty dynamics analysis using data collected in two rounds (1994 and 1977). The finding revealed that households remain poor in both rounds were 47.40 in a rural area and 64.14 in an urban area. The finding of a study conducted by (kedir A.M & Mckay A. 2005) using the Ethiopian urban household survey showed that about 25.9 percent of the surveyed urban households were in chronic poverty while the remaining 23 percent were transient poor. The ESS wave 1 is concentrated in a rural area and the wave 2 survey was conducted in both urban and rural areas. Therefore, when the integrated households were selected from wave 1 and wave 2, the household residents are more likely represents rural households.

The result of the analysis on the integrate sample households from the 2012 and 2014 survey data indicated that the majority of the households (70.13 percent) with the frequency of 2,184 households were chronic poor and 8.93 percent (278) of the rural households were transient poor (-). This implies that 70.13 percent of the households were remained poor in both 2012 and 2014 while 8.93 percent of the rural households from the total observation were transient poor (-) the household who was non-poor in 2012 and become poor in 2014 and vice versa. Of this the households who were poor in

2012 and become non-poor in 2014 were 12.68 percent of the total number of observation with the frequency of 395, and the last one is the households who didn't experience poverty in both years or the household who were non-poor in 2012 and 2014, the study categorized as never poor accounts for 8.25 percent of the observation with 257 of households. Comparing the percentage of households who are chronic poor with the above literature, the study showed that the proportion of chronic poor households was high implying the higher proportion of rural households are in chronic poverty and increasing over time.

To see the overall proportion of chronic and transient poor in Ethiopia wave 2 and wave 3 panel survey data were used in this study. The finding revealed that 43.39 percent of sampled households with the frequency of 1,973 households were in chronic poor during 2014 and 2016 while 18.76 (853) of the households were transit poor (-) representing those households who were non-poor in 2014 but become poor in 2016. In contrast the households who were poor in 2014 and become non-poor in 2016 accounted for 25.53 percent of the total number of observation with the frequency of 1,161. Finally households who never experience poverty in both survey period or the household who were non-poor in 2014 and 2016 covers 12.32 percent of the observation with 560 of households from 4,547 total observations. The transient poor include both transient poor (-) and transient poor (+) so the proportion of transient poor is slightly higher than that of chronic poor which is 44.29 percent of transient poor and 43.39 percent of chronic poor and from this result, the study finding is consistent with the above literature of urban area which shows the similar percentage of chronic and transient poor the same as the above analysis of wave2 and wave3.

5.3. Determinant of Poverty Dynamics in Ethiopia

To examine the determinant of poverty dynamics in Ethiopia the determinants of poverty states had been taken from the panel data of ESS waves. The result showed the probability of the household in and out of poverty due to the change in the given variables and it helps to identify which factor affects poverty to be dynamic.

The study finding revealed that the gender of the household head doesn't affect the poverty status of a household but the household whose residence is in a rural area are more exposed to poverty than the household in the urban area. The other factor that affected the poverty status is children between the age of 7 and 17, through increasing dependency ratio. Households headed by people with the age of 65 or older are highly exposed to poverty (Woldehanna, & Hagos, 2013). See table 4.4.3. The determinant of poverty showed that gender of the household head has an effect on poverty and the household with female-headed has a probability of 0.67 to be poor than the household with the male-headed, The residency of household affects the determinant of poverty and it shows the household whose residence is in a rural part of Ethiopia is more exposed to be poor than the urban household with the probability of 0.86 and the higher the dependency ratio the more likely to be poor with the probability of 0.02.

The number of household size or number of household and dependency ratio has a negative relationship with poverty dynamics the higher household size and dependency ratio result from the occurrence of the household to be transient poor and the higher it gets the household has a probability of chronic poor and education status of the household have a positive relation with poverty dynamics which is the more the household become educated the less being chronic or transient poor (Berisso O. 2016)

Both in rural and urban Ethiopia the household size affect poverty dynamics. In rural Ethiopia, the household size in one made the household stay in poverty by the probability of 0.21 and urban Ethiopia the relationship is similar to a rural household with a slight difference and as the number of household increase by 1 increases the probability the households remain in poverty by 0.25 percent.

Dependency ratio has the same effect on both rural and urban Ethiopian households. As dependency ratio increases by one the probability the household to stay being poor by 0.02 percent though the beta coefficient magnitude is not strong.

The educational status of the household head has a significant effect on poverty dynamics in rural areas while it has no statistically significant effect in urban Ethiopian households. The more the rural household is educated the less the probability to staying

in poverty. One level increase in education level of households head has a probability of 0.04 percent to get out of poverty or to stay as non-poor.

The effect of occupation of household head is higher in the rural household than urban household but with the same effect in both rural and urban household. Household head who work in a public program, state-owned enterprise and government office is more exposed to poverty than the household who work private individual and private company with the probability of 0.36 to urban and 0.42 of rural household staying on poverty. This implies that occupation of household has higher effect on households. Ownership of houses affects the poverty dynamic in both rural and urban households but the probability is slightly higher on rural households than that of urban. The household that owns a private house is less exposed to stay in poverty than the household that owns rental with 0.22 in rural and 0.21 in an urban household to stay in poverty. The urban probability shows a slightly higher than the rural household because housing is expensive in the urban area to compare to rural area which affects the income of the urban household.

The last one is non-farm activity or business which consider only in rural households. If the household doesn't have a non-farm business the probability of staying in poverty is 0.43. The amount of the coefficient is higher so it shows the non-farm activity or business is one of the variables that affect the rural household poverty dynamics strongly.

6. CHAPTER SIX: CONCLUSION AND RECOMMENDATION

6.1. Conclusion

The purpose of this study was to examine determinants of poverty dynamics in Ethiopia. Accordingly based on the study findings the following conclusions were drawn;

The study concluded that the determinant of poverty status and poverty dynamics has similar variables and the dynamics of poverty in Ethiopia has different proportion when data from different survey period is considered. The data analysis result of ESS 2012, 2014 and 2016 showed chronic poverty is higher in a rural part of Ethiopia than urban part of Ethiopia. From the data of ESS 2014 and 2016 analysis results in urban Ethiopia, chronic and transient poor had almost similar proportions. Non-farm activity is not included as a variable in urban household determinate of poverty dynamics. It is the only variable that is different from the rural part of Ethiopian households. Regarding, the number of the transient and chronic poor households, households in both rural and urban Ethiopia experience poverty either chronically or temporarily.

The rural households become chronic poor if they do not practice non-farm activity, if the household ownership term of a house is rented, and the occupation of the household head is public program work with a high number of households. And transient(-) if the household who uses to have a private house change to a rental house, increase in the number of households, household head occupation change from a private company or private individual to a state-owned enterprise, and the household who use to practice non-farm business not having a non-farm business. The household transient poor (+) is when the households are not participating in the non-farm activity in the past and start to practice, a change on the occupation of the household head to a private company or private individuals and, the change on ownership of house term if the household use to have the house by rent term change to private ownership because of those changes the household has the probability to transfer from poor to non-poor this will make the household to categorized in the transient poor (+) and the household never poor is the most probably the household who practice non-farm activity, the household head occupation is private and the ownership of house term is privately owned.

In the urban household, the main determinant of poverty dynamics is the occupation of the household head, ownership of a house, and the number of households or household size. The change in those factors makes the urban household stay in poverty or become non-poor. Similarly the rural household in the urban part of the country becomes chronic poor if the head is living in a rented residential house, or the household head is working in government office while having a high number of household. And transient(-) if the household who used to have a private house change to a rental house or, members of the households increase and occupation changed from a private company or private individual to a state-owned enterprise, the life standard is expected to deteriorate. If the household transient poor (+) is when the household is used to have few numbers of household member increase in a number of the household member change on the occupation of a household head to a private company or private individuals and the change on ownership of house term if the household use to have the house by rent term change to private ownership because of those changes the household has the probability to transfer from poor to non-poor this will make the household to categorized in the transient poor (+) and the household never poor is the most probably the household head occupation is private, the ownership of house term is privately owned and the number of households is few.

6.2. Recommendation

Based on the study findings and the conclusions drawn the following recommendations were forwarded;

The main determinant of poverty dynamics in rural Ethiopia is non-farm activity, occupation of household head, and ownership of a house, the main determinant of poverty dynamics in the urban household is the occupation of household head, ownership of the house, and the number of households or household size.

- The ownership of a house is critical in both rural and urban households so government and responsible bodies should consider several types of programs and projects that will allow the household to own a house privately to minimize both transient and chronic poverty.
- The other issue both rural and urban households of Ethiopia suffers from is the occupation of household head, by creating a system to different kind of occupations enabling them to fulfill the household basic need and to consider the payment depending on the time, the knowledge they required. And rural areas encourage and facilitate the opportunity for the household to participate in a non-farm activity in addition to farm activity to insure their income sustainability.
- In rural area by giving more awareness and facility on family planning minimize the household size, this will decrease both dependency ratio and number of household and those factors make the household to stay in poverty if the number is higher or increasing so taking measurement and promoting family planning will minimize the probability of the household to be poor so government and responsible organizations should consider the improvement and increment of family planning programs.

7. REFERENCE

Ambel, A.A., Mehta, P.A., Yigezu, B. and Ambel, A., 2015. Multidimensional poverty in Ethiopia: Changes in overlapping deprivations. *World Bank Policy Research Working Paper*, (7417).

Awel, Y.M., 2007. *Vulnerability and poverty dynamics in rural Ethiopia* (Master's thesis).

Bane, M.J. and Ellwood, D.T., 1983. *Slipping into and out of poverty: The dynamics of spells* (No. w1199). National Bureau of Economic Research.

Bigsten A. and Shimeles A., 2004.*Dynamics of Poverty in Ethiopia. Research Paper No. 2004/39*.World Institute for Development Economics Research (WIDER) Helsinki, Finland.

Bersisa, M., & Heshmati, A., 2016. Poverty and wellbeing in East Africa a multi-faceted economic approach. *Springer International Publishing Switzerland*. http:// doi.org/10.1007/978-3-319 30981-1_1

Berisso, O., 2016. Determinants of consumption expenditure and poverty dynamics in Urban Ethiopia: Evidence from panel data. In *Poverty and Well-Being in East Africa* (pp. 139-164). Springer, Cham.

Daniel B., 2018. *Urban poverty and it's dynamics in Ethiopia*; evidence form panel household survey, department of economics, Addis Ababa university, Addis Ababa.

Davis, P. and Baulch, B., 2011. Parallel realities: exploring poverty dynamics using mixed methods in rural Bangladesh. *The Journal of Development Studies*, *47*(1), pp.118-142.

Dercon, S. and Krishnan, P., 2000. Vulnerability, seasonality and poverty in Ethiopia. *The Journal of Development Studies*, *36*(6), pp.25-53.

Dercon, S., 2002. *The Impact of Economic Reforms on Rural Households in Ethiopia: a study from 1989 to 1995*. World Bank Publications.

Dercon, S., 2004. Growth and shocks: evidence from rural Ethiopia. *Journal of Development Economics*, *74*(2), pp.309-329.

Dercon, S., Hoddinott, J. and Woldehanna, T., 2008. Growth and poverty in rural Ethiopia: Evidence from 15 communities 1994-2004. *Chronic Poverty Report*, *9*.

Deressa, T.K. and Sharma, M.K., 2014. Determinant of poverty in Ethiopia. *Ethiopian Journal of Economics*, *23*(1), pp.113-130.

Dartanto, T. and Nurkholis, 2013. The determinants of poverty dynamics in Indonesia: evidence from panel data. *Bulletin of Indonesian Economic Studies*, *49*(1), pp.61-84.

Endris, S.H., 2019. Human Security and Migration: Human Right Violations and Challenges of Ethiopian Migrants in the Middle East. *Journal of International Trade, Logistics and Law*, *5*(1), pp.1-11.

Eyasu, A.M., 2020. Determinants of poverty in rural households: Evidence from North-Western Ethiopia. *Cogent Food & Agriculture*, *6*(1), p.1823652.

FDRE., 2018. *Poverty and economic growth in Ethiopia 1995/96-2015/16.* Planning and Development Commission.

Fields, G., Cichello, P., Freije, S., Menéndez, M. and Newhouse, D., 2003. Household income dynamics: a four-country story. *The journal of development studies*, *40*(2), pp.30-54.

Gaiha, R., 1988. Income mobility in rural India. *Economic Development and Cultural Change*, *36*(2), pp.279-302.

Glauben, T., Herzfeld, T., Rozelle, S. and Wang, X., 2012. Persistent poverty in rural China: Where, why, and how to escape?. *World Development*, *40*(4), pp.784-795.

Goshu, D., 2013. The dynamics of poverty and vulnerability in rural Ethiopia. *Ethiopian Journal of Economics*, *22*(2), pp.1-20

Haddad, L. and Ahmed, A., 2003. Chronic and transitory poverty: Evidence from Egypt, 1997–99. *World development*, *31*(1), pp.71-85

Haughton, J. and Khandker, S.R., 2009. *Handbook on poverty+ inequality*. World Bank Publications.

Hill, R. and Tsehaye, E., 2014. *Ethiopia-poverty assessment* (No. AUS6744, pp. 1-0). The World Bank.

Hill, M.S. and Jenkins, S.P., 2001. Poverty among British children. *The dynamics of child poverty in industrialised countries. Cambridge: CUP*.

Hojman, Daniel, and Felipe Kast. 2009. on the Measurement of Poverty Dynamics. *HKS Faculty Research Working Paper Series RWP09-035, John F*. Kennedy School of Government, Harvard University.

Hulme, D., Moore, K. and Shepherd, A., 2001. Chronic poverty: meanings and analytical frameworks. *Chronic Poverty Research Centre Working Paper*, (2).

Hulme, D. and Shepherd, A., 2003. Conceptualizing chronic poverty. *World development*, *31*(3), pp.403-423.

IMF, S., 2017. World economic outlook: Gaining momentum. *International Monetary Fund Washington, DC*.

Jalan, J. and Ravallion, M., 1998. *Determinants of transient and chronic poverty: evidence from rural China*. World Bank Publications.

Jalan, J. and Ravallion, M., 2000. Is transient poverty different? Evidence for rural China. *The Journal of Development Studies*, *36*(6), pp.82-99.

Kafle, K., McGee, K., Ambel, A. and Seff, I., 2016. Once poor always poor? Exploring consumption-and asset-based poverty dynamics in Ethiopia. *Ethiopian Journal of Economics*, *25*(2), pp.37-76.

Kedir, A.M. and McKay, A., 2005. Chronic poverty in urban Ethiopia: Panel data evidence. *International Planning Studies*, *10*(1), pp.49-67.

Krishna, A., 2007.Subjective assessments, participatory methods and poverty dynamics: The Stages-of-Progress method. *Chronic Poverty Research Centre Working Paper*, (93).

Kuchler, B. and Goebel, J., 2003. Incidence and intensity of smoothed income poverty in European countries. *Journal of European Social Policy*, *13*(4), pp.357-369.

Lipton, M. and Ravallion, M., 1995. Poverty and policy. *Handbook of development economics*, *3*, pp.2551-2657.

Liverpool-Tasie, L.S.O. and Winter-Nelson, A., 2011. Asset versus consumption poverty and poverty dynamics in rural Ethiopia. *Agricultural Economics*, *42*(2), pp.221-233.

Ludi, E. and Bird, K., 2007. Understanding poverty (Brief No. 1). Briefing Note produced for the Swiss Agency for Development and Cooperation

McCulloch, N. and Calandrino, M., 2003. Vulnerability and chronic poverty in rural Sichuan. *World Development*, *31*(3), pp.611-628.

Medina, L., Jonelis, M.A.W. and Cangul, M., 2017. *The informal economy in Sub-Saharan Africa: Size and determinants*. International Monetary Fund.

Michler, J.D. and Josephson, A.L., 2017. To specialize or diversify: Agricultural diversity and poverty dynamics in Ethiopia. *World Development*, *89*, pp.214-226.

Muktar, S.T., Mohamad, J.H. and Woldemichael, Y.M., 2013. Dimensions and determinants of agro-pastoral households' poverty in Dembel District of Somali Regional State, Ethiopia. *Dimensions*, *4*(15).

Narayan, D., 2000. Poverty is powerlessness and voicelessness. *Finance & Development*, *37*(004).

National Planning Commission, 2017. Nepal's Sustainable Development Goals, Baseline Report, 2017. Government of Nepal, National Planning Commission, Kathmandu, Nepal.

Negatu, W., 2008. Food security strategy and Productive Safety Net program in Ethiopia. *Digest of Ethiopia's national policies, strategies and programs*, pp.1-22.

Oduro, A.D., 2002. Poverty Dynamics. *Advanced Poverty Training Programme organized by SISERA and the WBI*.

Owuor, G., Ngigi, M., Ouma, A.S. and Birachi, E.A., 2007. Determinants of Rural Poverty in Africa: The case of small holder farmers in Kenya. *Journal of Applied Sciences*, *7*(17), pp.2539-2543.

Ravallion, M., 1992. *Poverty comparisons: A guide to concepts and methods*. The World Bank.

Ravallion, M., 1998. *Poverty lines in theory and practice* (Vol. 133). World Bank Publications.

Rodgers, J.R. and Rodgers, J.L., 1993. Chronic poverty in the United States. *Journal of Human Resources*, pp.25-54.

Seff, I. and Jolliffe, D., 2016. Multidimensional poverty dynamics in Ethiopia: how do they differ from consumption-based poverty dynamics?. *Ethiopian Journal of Economics*, *25*(2), pp.1-35.

Sen, A., 1983. Poor, relatively speaking. *Oxford economic papers*, *35*(2), pp.153-169.

Sen, A., 1985. A sociological approach to the measurement of poverty: a reply to Professor Peter Townsend. *Oxford Economic Papers*, *37*(4), pp.669-676.

Sharp, K., Devereux, S. and Amare, Y., 2003. *Destitution in Ethiopia's Northeastern Highlands (Amhara National Regional State)*. Institute of Development Studies at the University of Sussex.

Tsehay, A.S. and Bauer, S., 2012. Poverty and vulnerability dynamics: Empirical evidence from smallholders in northern highlands of Ethiopia. *Quarterly Journal of International Agriculture*, *51*(892-2016-65173), pp.301-332.

UNDP, G., 2014. p. 5 http://hdr. undp. org/sites/all/themes/hdr_theme/country-notes. *KEN. pdf*.

Woldehanna, T. and Hagos, A., 2013. Dynamics of welfare and poverty in poor rural and urban communities of Ethiopia. *Young Lives: Oxford Department of International Development (ODID), University of Oxford, Oxford*.

Woldehanna, T., Gudisa, R., Tafere, Y. and Pankhurst, A., 2011. *Understanding changes in the lives of poor children: Initial findings from Ethiopia: Round 3 survey report*. Young Lives, Department of International Development, University of Oxford.

World Bank, 2014. *World development indicators 2014*. The World Bank.

World Bank Group, 2016. *World development report 2016: digital dividends*. World Bank Publications.

World Bank. (2017). Ethiopia GDP per capita PPP https://tradingeconomics.com/ethiopia/gdp-per-capita-ppp.

World Bank, 2020. Ethiopia Poverty Assessment: Harnessing Continued Growth for Accelerated Poverty Reduction.

Yaqub, S., 2000. *Poverty dynamics in developing countries* (Vol. 16). Brighton: Institute of Development Studies.

Annex 1 Description of Household Resident and Age of Household Head

Household resident								
year/ waves	Rural		Small towns		Urban		Total	
	Frequency	Percent	Frequenc	Percent	Frequency	Percent	Frequency	Percent
2014-2	3272	66.05	427	8.62	1255	25.33	4954	100
2016-3	3272	66.05	427	8.62	1255	25.33	4954	100
2019-4	3115	46.01	_	_	3633	53.99	6770	100
Age of household head								
year/ waves	<18		18-65		>65		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
2014-2	40	0.81	4242	85.84	660	13.35	4942	100
2016-3	10	0.21	3996	84.4	735	15.39	4731	100
2019-4	53	0.78	6011	89.57	759	10.43	6770	100

Annex 2 Descriptions of Educational Status of Household Head, Occupation of Household Head and Ownership of Dwelling

Educational status of household head						
year/waves	2014-2		2016-3		2019-4	
Category	Frequency	Percent	Frequency	Percent	Frequency	Percent
KINDERGARDEN	6	0.26	6	0.27	5	0.13
1ST GRADE COMPLETE	8	0.34	68	3.08	71	1.88
2ND GRADE COMPLETE	153	6.59	132	5.98	113	2.99
3RD GRADE COMPLETE	202	8.70	188	8.51	221	5.85
4TH GRADE COMPLETE	224	9.65	208	9.42	271	7.17
5TH GRADE COMPLETE	179	7.71	183	8.28	236	6.24
6TH GRADE COMPLETE	167	7.20	196	8.87	236	6.24
7TH GRADE COMPLETE	166	7.15	167	7.56	260	6.88
8TH GRADE COMPLETE	192	8.27	192	8.69	383	10.13
9TH GRADE COMPLETE	58	2.50	46	2.08	75	1.98
10TH GRADE COMPLETE	91	3.92	88	3.98	91	2.41
11TH GRADE COMPLETE	14	0.60	13	0.59	26	0.69
12TH GRADE COMPLETE	103	4.44	107	4.84	165	4.37
CERTIFICATE	14	0.60	11	0.50	11	0.29

TEACHER TRAINING CERTIFICATE	5	0.22	4	0.18	6	0.16
1ST YEAR COLLEGE COMPLETE	1	0.04	1	0.05	1	0.03
2ND YEAR COLLEGE COMPLETE	6	0.26	6	0.27	6	0.16
DIPLOMA	55	2.37	54	2.44	94	2.49
3RD YEAR UNIVERSITY	4	0.17	11	0.50	2	0.05
1ST DEGREE (BA/BSC)	39	1.68	26	1.18	55	1.46
GRADUATE DEGREE (MA/MS/MPHIL/PHD)	6	0.26	9	0.41	30	0.79
NC 9TH GRADE COMPLETE	29	1.25	12	0.54	76	2.01
NC 10TH GRADE COMPLETE	107	4.61	9	0.41	352	9.31
NC 11TH GRADE COMPLETE	9	0.39	6	0.27	16	0.42
NC 12TH GRADE COMPLETE	10	0.43	22	1.00	61	1.61
NC CERTIFICATE (10+1)-TECHNICAL/VOCATIONAL	20	0.86	13	0.59	36	0.95
NC CERTIFICATE (10+2)-LEVEL 2 INCOMPLETE	8	0.34	6	0.27	10	0.26
NC CERTIFICATE (10+2) COMPLETE	11	0.47	9	0.41	24	0.63
NC CERTIFICATE (10+3) LEVEL 3 ONE YEAR COMPLETE	19	0.82	12	0.54	22	0.58
NC CERTIFICATE (10+3) LEVEL 3 TWO YEARS COMPLETE	12	0.52	13	0.59	24	0.63
NC DIPLOMA (10+3) LEVEL 3	14	0.60	97	4.39	222	5.87
1ST YEAR COLLEGE COMPLETE	13	0.56	15	0.68	17	0.45
2ND YEAR COLLEGE COMPLETE	17	0.73	10	0.45	20	0.53
3RD YEAR COLLEGE COMPLETE	8	0.34	19	0.86	25	0.66
1ST DEGREE OR LEVEL 4 COMPLETE	99	4.27	115	5.21	333	8.81

ABOVE 1ST DEGREE / LEVEL 4	16	0.69	27	1.22	83	2.20
INFORMAL EDUCATION /BASIC EDUCATION	15	0.65	13	0.59	50	1.32
ADULT EDUCATION	3	0.13		0.00	5	0.13
ALTERNATIVE EDUCATION		0.00	1	0.05	2	0.05
NON-REGULAR	5	0.22	4	0.18	18	0.48
ILLITRATE	13	0.56	9	0.41	23	0.61
DON'T KNOW		0.00		0.00	3	0.08
Total	2321	100	2209	100	3780	100
Occupation of household head						
year/waves	2014-2		2016-3		2019-4	
Category	Frequency	Percent	Frequency	Percent	Frequency	Percent
1:Private Company	211	23.24	180	23.68	328	22.09
2:Private Individual	169	18.61	147	19.34	400	26.94
3:Government	429	47.25	359	47.24	623	41.95
4:State-Owned Enterprise	28	3.08	24	3.16	33	2.22
5:Public Works Program	5	0.55	1	0.13	41	2.76
6:Church / Religious Organization	42	4.63	30	3.95	21	1.41
7:Political Party	_	_	1	0.13	1	0.07
8:Other (Specify)	24	2.64	18	2.37	38	2.56
Total	908	100	760	100	1485	100
Ownership of house/dwelling						
year/waves	2014-2		2016-3		2019-4	
Category	Frequency	Percent	Frequency	Percent	Frequency	Percent
1; Privately owned	3490	71.91	3831	77.33	4293	64.45
2: Free of rent	368	7.58	276	5.57	508	7.63
3: Rented	990	20.40	816	16.47	185	2.78
4: Other (specify)	5	0.10	31	0.63	9	0.14
Total	4853	100	4954	100	6661	100

Annex 3 Description of Number of Household, Distance from the Market and Dependency Ratio

Dependency ratio of household				
year/waves		2014-2	2016-3	2019-4
Minimum	Amount	11.75	53	48.67
	Frequency	2	2	1
	Percent	0.04	0.04	0.02
Maximum	Amount	100	100	100
	Frequency	302	192	420
	Percent	6.42	3.88	6.31
Average		79.04	82.41	82.8
Total number of observati		4702	4954	6661
Distance from the market				
year/waves		2014-2	2016-3	2019-4
Minimum	Amount	0.3	0	0.4
	Frequency	4	23	30
	Percent	0.11	0.46	0.46
Maximum	Amount	283	283	448.7
	Frequency	5	8	10
	Percent	0.14	0.16	0.15
Average		45.24	55.4	54.23
Total number of observati		3490	4954	6572
Number of household/Household size				
year/waves		2014-2	2016-3	2019-4
Minimum	Amount	1	1	1
	Frequency	539	446	750
	Percent	11.07	9	11.26
Maximum	Amount	16	16	19
	Frequency	1	2	1
	Percent	0.02	0.04	0.02
Average		4.45	4.72	4.25
Total number of observati		4869	4954	6661

Annex 4 Description of Sex of Household Head, Non-farm Activity and Shock

Sex of household head						
	Female		Male		Total	
year/waves	Frequency	Percent	Frequency	Percent	Frequency	Percent
2014-2	1498	30.25	3454	69.75	4952	100
2016-3	1421	29.15	3454	70.85	4875	100
2019-4	2143	31.65	4627	68.35	6770	100
Non-farm activity/business						
	Have		Don'tHave		Total	
year/waves	Frequency	Percent	Frequency	Percent	Frequency	Percent
2014-2	1583	32.51	3286	67.49	4869	100
2016-3	1867	37.69	3087	62.31	4954	100
2019-4	268	4.06	6332	95.94	6600	100
Shock						
	Expirence		Didn’t expirience		Total	
year/waves	Frequency	Percent	Frequency	Percent	Frequency	Percent
2014-2	70	1.41	4884	98.59	4954	100
2016-3	105	2.12	4849	97.88	4954	100
2019-4	105	1.55	6665	98.45	6770	100