ADDIS ABABA UNIVERSITY

COLLEGE OF DEVELOPMENTAL STUDY

CENTER FOR POPULATION STUDIES

Correlates of Children Ever Born Among Women of Reproductive Ages in Ethiopia: Evidences from the 2019 Mini Ethiopian Demographic and Health Survey.

By

Woinshet Defabachew

JULY, 2022

ADDIS ABABA, ETHIOPIA

ADDIS ABABA UNIVERSITY

COLLEGE OF DEVELOPMENT STUDIES

CENTER FOR POPULATION STUDIES

Correlates of Children Ever Born Among Women of Reproductive Ages in Ethiopia: Evidences from the 2019 Mini Ethiopian Demographic and Health Survey.

By

Woinshet Defabachew

Advisor

Chalachew Arega (M.Sc.)

A Thesis Submitted to the Center for Population Studies, College of Developmental Studies, Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Masters of Science in Population Studies with Specialization in Reproductive Health

July 2022

Addis Ababa, Ethiopia

DECLARATION

This is to certify that the thesis prepared by **Woinshet Defabachew** entitled '**Correlates of Children Ever Born Among Women of Reproductive Ages in Ethiopia: Evidences from the 2019 Mini Ethiopian Demographic and Health Survey** is the original work of the investigator. The research complies with university norms and satisfies established standards in terms of originality and quality.

Signed by the Examining Board

Wondemeye Ashena(PHD)		August 19, 2022
External examiner (Name)	Signature	Date
Prof. Nigatu Regassa	_____	_____
Internal examiner (Name)	Signature	Date
Mr. Chalachew Arega	_____	_____
Advisor (Name)	Signature	Date

Center Head Graduate Program Coordination

ACKNOWLEDGEMENT

I would like to acknowledge and give my warmest thanks to my supervisor Mr. Chalachew Arega, who made this thesis paper possible. His guidance and advice carried me through all the stage of writing my project. I would also like to thank Addis Ababa University and all my college staff members for giving this chance; I would also like to give special thanks to my families as a whole for continuous support and understanding when undertaking my research paper thanks to you. Finally, I would like to thank God, for letting me through all the difficulties. I have experienced our guidance day to day. You are the one who let me finish my whole course till this research. I will keep on trust you for my future**.**

List of acronyms

AOR	Adjusted Odds Ratio
CEB	Children Ever Born
CSA	Central Statistical Agency
EDHS	Ethiopian Demographic and Health Survey
EA	Enumeration Area
FP	Family Planning
HSDP	Health Sector Development Program
IDI	In-Depth Interview
MDGs	Millennium Development Goals
MDSR	Maternal Death Surveillance Report
MHS	Maternal Health Service
OR	Odds Ratio
PHC	Primary Health Care

Contents

List of tables

Titles Pages

List of figures

Title Pages

ABSTRACT

Ethiopia's total fertility rate reduces slightly from 4.6 in 2016 to 4.15 in 2019 with an average annual decline rate 0.15 per women. This trend still demands to find the factors that may currently affect the currently fertility rate in Ethiopia due to still high rate of fertility and population growth. Children ever born, for this study, is the total number of children born by a woman (both alive and dead) and reported during the data collection period. The study on fertility is significant as the actual fertility depends on women current fertility level. However, there is limited study conducted about children ever born in Ethiopia so far. As a result this study is necessitated to be conducted. The objective of the study to study is to examine the key factor that affecting fertility in Ethiopia based on the EDHS data on women of reproductive ages. The survey was conducted using a multistage stratified cluster sampling method that covers all the 9 regions and 2 city administration of Ethiopia. A cross sectional study design was used to conduct the research. The analysis process was conducted by negative binomial regression model, by using this model current age of women, marital status, educational attainment, place of usual residence, wealth index, contraceptive usage and its knowledge was found to have higher significant predictor of current fertility level of women. Unexpected result such as child sex deference, daughter loss experience and duration of marriage of mothers was not found any association with the children ever born. Factors which were found to have statistical effect on the dependent variable needs receive attention by concerned bodies to make women to reduce their current fertility level reasonably. So in conclusion Ethiopia still need to take necessary step to control sustainably the current fertility level by making proper policy on the factors found in this study.

Key words;- Children ever born, Fertility, Logistic regression, Reproductive age women, Correlation, Ethiopia.

CHAPTER ONE

INTRODUCTION

1.1. Background

Fertility is usually understood as the actual child- bearing performance of the population. It's the component of population dynamics that encompasses a very important contribution to changes in population size and structure over time. The world population showed a five billion increment (2.6 billion to 7.6 billion) from 1950 to 2017 due to these dynamics, wherever most of this increment was higher in South Asia and sub- Saharan Africa relative to the remaining elements of the world (Casterline & Han, 2017)

World's population increase is driven by high fertility in sub-Sahara Africa whose population is forecast on top of double within the following 40 years. Based on 2019 World population prospects report, world fertility falls from 2.5 children per women in 2019 to around 2.2. Africa remains the region with the maximum fertility at 4.7 children per women (UN, 2015). There is a great concern about the levels, patterns and trends on fertility in sub-Saharan Africa (UN, 2015).

Pattern of population change can interrupt by fertility, mortality and migration. Of the three main drivers, fertility is the main determinant of population dynamics in countries due to the conventional demographic theories (Bongaarts & Poter, 1994), high fertility within the initial stage of demographic transition is that the consequence of high desired family size. Couples need many children to assist with family enterprises such as farming and for security in old age (Easterlin, 1975). Additionally, high child mortality leads parent to possess further more additional children to protect against loss or to substitutes loss. Fertility decline occurs when rising level of urbanizations and education, transformation in economy, and reducing mortality lead to parents to desire a smaller amount of children/births (Zelalem & Likenaw, 2020)

Ethiopia is that the second-most inhabited country in Africa with an estimated population of over 112 million. By 2019 the population development rate stood at around 2.6% which is considered to be high (World Bank, 2019). After we see the figure of 2007 census, it had 20.8 million increments from 1994 census. Fertility is the most important drives of the changes observed in the last few

decades. In Ethiopia, the average children ever born per women was 4.6 in 2016 which is higher than the worlds average number of children ever born per women. Previous studies in Ethiopia indicated that fertility is impacted by demographic, cultural and socioeconomic characteristics (Teklu, 2011; Assefa et al, 2011; Teller and Assefa, 2011).

Factors like the worth the society offers to youngsters, preferences concerning the sex of a baby and family size, the social position and role of women in society, economic needs and old age security schemes and the prevalence of sexually transmitted diseases are some of the drivers affecting the fertility differentials in Ethiopia (Teklu, 2011; Assefa et al, 2011; Teller & Assefa, 2011). In view of addressing these and significantly reduce such disparities, Ethiopia adopted the first National Population Policy by the year 1993 with the main objective of reducing fertility rate from 7.7 children per women to approximately 4.0 per women by the year 2015 (ENNP, 1993).

During the last two decades, Ethiopia has made a significant decline in fertility rate at the national level. The Ethiopian TFR dropped from about 7 children per woman in 1990 to 4.2 children per woman in 2019 (CSA, 2019). This suggests that fertility transition has recently begun at the general population level. The overall wanted fertility rate (TWFR) in Ethiopia is 3.0 children per woman, 1.6 less than the total fertility rate in 2016 Even though fertility has shown a declining trend at the national level; the transition has not begun in many regions. There are huge urban-rural differentials and unacceptably high regional disparities in fertility rates (Teller & Assefa, 2011; CSA, 2019). For instance, the peripheral regions (such as Somali and Afar) seem to have experienced an increasing fertility rate during the last two decades, suggesting that these regions are still experiencing closer to a natural fertility regime (i.e., TFR >6 and contraceptive prevalence < 20%) (CSA, 2019).

1.2. Statement of the Problem

The demographic patterns of SSA countries are characterized by high fertility and high infant mortality (Bekele, 2011). Fertility is that the most dynamic part in deciding the dimensions, rate of growth and also the age-sex structure of a population. Fertility is one among the three principal determinants of the scope and structure of the population of a nation (the additional two being mortality and migration). In the absence of considerable migration, at any given level of mortality, changes in fertility causes variations within the rates of natural increase and exert a strong influence on the age structure of a population (Anteneh, et al. 2015). It is a significant increasing force in

population dynamics and a significant neutralizing force to population reduction through mortality. Fertility is additionally a significant consider the determination of the social, economic and political options of a nation (CSA, 2014).

Ethiopia is the second-most populous country in Africa with an estimated population of over 112 million and expected to surpass 200 million by the end of 2049. With 4.6 births per woman and growth rate of 2.6% per annum the population of Ethiopia is considered to be high. Globally, women of reproductive age refer to all women aged 15–49 years. The minimum legal age for marriage in Ethiopia is 18 for both boys and girls, however the laws are not always enforced. Therefore, the study population all reproductive age group of 18 to 49 years (World Bank, 2019).

The population of Ethiopia was 29.5 million in 1970, grew to 41.5 million in 1985 and reached to 65.3 million in 2001 and approaches to 100 million in 2013. In other words, the population growth rate increased from 2.3% in 1970 to its climax (3.2%) in 1990 and then declined to 2.7% in the present decade (Ferina, 2001). The current growth rate (2.7%) means that Ethiopia would take 23 years to double its population. Ample scientific works point out that TFR of Ethiopia shows a declining trend in some regions and an increasing trend in other regions. For example, Tigray, Amhara, Oromiya and SNNP regions show a declining trend in total birth rate whereas regions like Somali and Afar are moving to the reverse direction, and Gambella, Harari and Benishangul-Gumuz regions show no amendment in birth rate. (Hailemariyam, 2013). Though TFR is high in rural areas of Ethiopia, there is a declining trend (6.0 in 2000 to 4.15 in 2019). Though, urban areas of Ethiopia experience low TFR, there is an increasing trend at the present situations (for example, 2.4 in 2005 to 2.6 in 2011) (Hailemariyam, 2013). The government of Ethiopia recognized that population growth rate is one of the main challenges in poverty reduction and sustainable development (Ringheim, 2009).

The impact of high fertility rate on health is reflected mainly on high rates of induced abortion, in a rise in the rates of maternal and child mortality. Moreover, children that are born of unplanned pregnancies may face poor health outcomes, including low birth weight, stunted growth, and poor nutrition, as well as lower educational attainment. In addition, women, their partners, and their families are forced connected the monetary burden related to childrearing, that end in loss of family earnings and will increase the chance of falling into poverty (David, 2015). So, understanding the

factors responsible for the fertility level would help in designing strategies to effectively implement any program to tackle uncontrolled fertility.

The common factors associated with fertility were (age at first birth, Early marriage, education of mother and father, working status mother, region, religion and, use of contraception, family size etc). A proper understanding of these factors is of paramount importance in tackling the problem of uncontrolled fertility, which paves the way for the improvement of the prevailing socioeconomic problems of the country. Particularly, it would have a considerable contribution within the improvement of the health standing of women and children. It is reasonable that they may be connected to each other. However, previous studies in Ethiopia were done in small geographical and limited number of variables. Therefore, this study was aiming to identify the factors associated with high fertility among married women in Ethiopia based on a nationally representative data.

1.3. Objectives of the Study

The general objective of this study is to examine the key factors affecting fertility in Ethiopia based on the EDHS data among women of reproductive ages. In line with this general objective, the study will try to address the following specific objectives:

A. Examine the key demographic (focusing on age at first marriage and age at first birth) factors that affect fertility among women of reproductive ages in Ethiopia and;
B. To assess the effects of family planning related factors on the number of children ever born among women of reproductive ages in Ethiopia.

C. To assess the role of biological factors (breast feeding and amenorrhea) in fertility differentials in Ethiopia.
D. To assess the key socioeconomic determinants of fertility in Ethiopia (i.e., the background variables in the framework of fertility determinants).

1.4. Research Questions

A. What are the socio-economic factors that affect children ever born among women of reproductive ages in Ethiopia?

B. What are the main demographic factors affecting children ever born among women of reproductive ages in Ethiopia?
C. What are the roles of the biological and family planning related factor in fertility among women of reproductive ages in Ethiopia?

1.5. Significance of the Study

The study of fertility in several societies is incredibly necessary to look at the doable determinants of fertility with their strength and direction. The area selected for the present study is the whole country (both rural and urban areas). It aims to analyze the magnitude and direction of some selected socioeconomic determinants of fertility in Ethiopia.

Previous studies in Ethiopia were only focused on small scales like regions, districts and some urban centers, treating limited number of variables. Therefore, this study is hoped to identifying the factors associated with fertility among married women in Ethiopia by using the most recent survey data conducted nation-wide encompassing both urban and rural areas.

The findings of the study are hoped to help governmental and non-governmental organizations (NGO), private organizations, and community-based organizations in Ethiopia for their planning, geographic targeting, and monitoring and evaluating programs related to fertility and other RH services.

1.6. Scope of the Study

The study aims to assess the factors influencing the high current fertility level of women of Ethiopia living both in rural and urban areas. The study is cross sectional quantitative design was used to test of variables; children ever born used as an outcome variable, the independent variables are not, in any way, exhaustive due to data limitations, and are limited to key demographic, socio-economic, biological and family planning related factors. Potential variables at institutional and macro levels (such as quality of RH services, community education, policy related factors …etc) are not part of this study.

1.7. Organization of the Paper

The thesis has five chapters. Chapter one briefs the background, problem statement, objectives, research questions, scope, and significance of the study. Chapter two discusses literature reviews. In chapter three, research methodology was described. In chapter four, results and discussions will be presented. The last chapter was devoted to the summary, conclusion and policy implication.

CHAPTER TWO

LITERATURE REVIEW

2.1. Review of literatures

2.1.1. Theories of Values of Children

The values of children, as studies conducted by Friedman and colleagues (1994), is primarily important for the capacity to reduce uncertainty for household and to enhance marital solidarity between couples; parents` desire for children has been decreasing because of changes in norms, and preferences and shifts in economic constraints that posed costs on rearing children (Lai, 2012) also revealed that rearing of children has costs, being direct (costs on food, health, clothing, education and shelter) and indirect being loss of freedom, worries on health, safety, ability, qualities of children and the opportunity costs of mothers in rearing children. Fertility decline theory, on the other hand, explains that the demand for children is of cultural rather than availability or knowledge of fertility regulation (Mason, 1992).

In developing countries higher fertility ideals may be expected since parents derive economic benefit from their children (Vlassoff, 1984). Economic theory states that fertility should be negatively related to income as child rearing takes time and hence more expensive for parents with higher wages; higher-wage people demand super child quality, making quantity more costly to invest on quality, and hence those parents prefer fewer children (Jones et al., 2008). Children in most developing countries are also considered as old age security where in the absence of social welfare institutions such as social security systems, unemployment insurance, free health care, nursing home and others are supposed to be provided to elders by children (Nauck, 2014).

Based on conventional demographic theory, high fertility in the early stages of the demographic transition is the result of high level of desired family size (Bongarts and Casterline, 2013). In line with this, (Caldwell, 1982) stated in his wealth flow theory that unless economic and social flow of wealth from children to parents decline, the demand for larger number of children by parents in developing countries continue to exist at a stable pattern.

Beakers theory of fertility (2014) showed that a women levels of fertility affected by the quality and quantity of children, which means whether to have children and how many, which good to produce

in the home for construction or to buy on the market, and many other decision in terms of the economic costs and benefits to the respective members of the family. Parents derive utility from both child quality (i.e the number of children) and the quality of children, which can be peroxided by the amount spent on each child at given prices. So he conclude that child quality increase (more spending per child), increasing quality (more children) become more expensive. conversely, if quantity increases, increasing quality also becoming more costs, because spending on quality accrues for each child. So the theory can generate a negative income fertility relationship without having to rely on variation in knowledge of birth condition. (Beker, S, 1986)

2.1.2. Socio- Economic Factors

- **Education**

Female education has consistently been found to be an important determinant affecting their fertility decision-making (Phan, 2016). Rising level of education leads parents to desire for smaller number of children and actual fertility (Bongaarts et al., 2013; and Deneke, 2015). According to Phan (2016), higher level of women`s education leads to less available time for fertility thus reducing potential time for reproduction.

The study conducted in Ethiopia based on 2016 EDHS report showed that educational level had its own decrement effect on the number of children ever born. i.e.; based on the level education, women completed their primary level education, number of children ever born increased by 46% compared with women completed their higher education, while holding all other variables in the model constant in Ethiopia based on EDHS 2016 data. Women completed secondary level education increase amount of children ever born by 79% compared with women completed higher education level. No educated women increase the number of children ever born by 78%% when compared to those women completed higher education, though holding all other variables in the model constant. (Zelalem, 2020).

- **Religion**

In traditional societies, the number of children to be born is decided by the extended families or by the husbands where child values are maximized by neglecting child costs and benefits; women who have larger number of children receive great reputation where religiosity has the direct influence on it (Masoud, 2009). Phan (2016) declared that Muslim societies prefer to have more children than

Christians; cultural factors can affect the number of children women desire to have in their life time. Fertility preferences can be shaped by the fertility norms reflected in different religious groups though their roles seem to be diminished in the changing socioeconomic activities.

The study conducted in Ethiopia on factors affecting children ever born based on 2016 EDHS data shows that religion was found significantly associated with the current fertility level of women. The result shows that protestant religion follower increase the number of children ever born by 82% when comparison with orthodox Christian religious women, Muslims religious women increase the number of children ever born by 20% when compared with orthodox Christian religious follower women and also Traditional religious and Other religion follower increase the number of children ever born by 70% and by 92% when compared with women in orthodox religious follower. (Zelalem, 2020). There is strong association between women's those have high bond with their religion or have high religious beliefs and the ideal number of children. (Teller and Assefa, 2011).

- **Ethnicity**

Ethnicity plays an important role in fertility and the use of contraceptive in Malawi (Palamuleni, 2014). According to Palamuleni, without controlling for other variables, some ethnic groups are positively related while most are negatively related to fertility. Beginning of fertility decline varies with ethnic groups where some begin to reduce fertility earlier than some others. (Ayo, 2019).

The study conducted in Nigeria on ethnic disparities in fertility and its determinants, the finding shows that there is a major difference of total fertility rate among three major ethnic groups, from the two ethnic group which is Hausa and Igbo their level of total fertility rate was 8.02 and 4.9 respectively. By controlling the effect of other variables the desire of more children need to have in Hausa ethnicity was 3 times than women in Igbo ethnicity.

- **Women Empowerment**

Empowerment is the growth of people's capability to make strategic life selection in an exceedingly distinction wherever this ability was earlier denied to them (kabeer, 2001). The degree of women`s freedom for reproductive decision making may be affected freedom for reproductive decision making may be affected by aspects like freedom of movement, their decision-making ability to visit relatives, their communication about fertility regulation with partner, and their access to and control over resources (Gebremariam, 2007).

According to Gebremariam women`s decision making power is the most important measure of women`s fertility preferences, particularly for sub-Saharan Africa where Ethiopia is included. In the 18 articles examined by Upadhyayet et al.,(2014), at least some variables of all articles reviewed shows positive associations between women empowerment and the ability to make fertility decisions; there was also a positive, negative and non-significant association between women empowerment and ideal family size in another 7 studies. For at least some variables there was an inverse, though most show insignificant, relationship between the desire for more children and women empowerment in another 7 studies as Upadhyay and others` reviews disclosed. In their other three reviews strong decision-making power of women was associated with long birth interval (Upadhyayet et al., 2014).

- **Wealth Status**

Economic factors like job, food shortage and housing conditions are important determinants of fertility preferences as study conducted in Malawi showed (Sennott and Yeatman, 2012). In Ethiopia fertility was found to be higher among women of low household food security though it is hard to find the cause and the effect of the two-food shortage and high fertility nexus (Wubegzier, 2011). High income households have large number of children than those of low-income households but income is inversely proportional to fertility preferences (Masoud, 2009). Increasing wealth increases level of fertility when educational capital is minimal but inversely/ negatively associated with fertility when educational capital is highly supplied (Colleran et al., 2015).

A study conducted in Egypt showed that there was a positive correlation between wealth index score and the desire for more children (Mansour, 2015).

- **Work Status**

According to Phan (2016) for employed women the opportunity cost of rearing children is higher than working. This is because, child care and cost of raising children is higher and maternal leave is small in anti-natalist countries; thus, employed women try to delay their child bearing or prefer to have fewer children.

According to Deneke (2015) households engaged in agriculture in Damotwoyde (South Ethiopia) have high fertility of about 6 children per woman as compared to the office employed and trader woman having as half size children as those engaged in agricultural activities where house wives are mostly engaging in household domestic chore. However, women in non-agricultural sector have

higher fertility than those without job (Anteneh, 2015). It is related to lack of income for jobless to up bring children, increasing women`s participation in the wage labor market challenges child rearing since resource and time available to support children is lacking (Masoud, 2009).

2.1.3. Demographic Factors

- **Age:**

Old respondents are more likely to have a lower ideal number of children than younger ones (Liefbroer, 2009). In contrary to this, (Masoud, 2009) declared that younger generations desire to have fewer children than older generations. This is because; generations aspire to decline their fertility over time (Gebremariam, 2007). A study conducted in Niger reveals, however; that Current age is only slightly related with women's ideal number of children (Maytan, 2014).

Declining in TFR in Southeast Asian women was associated with increasing age at first marriage (Phan, 2016). As age increases, the desire for more children decreases in Bangladesh and Indonesia. The proportion of women practicing short birth interval decreases and the length of birth spacing increases with increasing age in Southern Ethiopia (Samuel et al., 2011).

- **Number of living Children**

Women with children in Ethiopia desire to stop child birth which increases with increasing number of children; the mean ideal number of children increases with increasing number of living children (Susuman et al., 2014). Moreover, study undergone in Kenya showed that increasing number of living children significantly affected fertility preferences (Wachira, 2001). In Ethiopia the proportion of women to stop child bearing is increasing with increasing number of living children of 4 and above (Teller and Assefa, 2011). Moreover, increasing number of living children decreases the desire for more children in Indonesia (Mellissa et al., 2010). However, a study undergone in Southern Ethiopia showed that desire for more children was not associated with increasing fertility (Yohannis et al., 2004). The desire to length of child bearing for the next birth is inversely related to the number of living children in Malawi spacing and vice versa as study in Saudi Arabia indicated. Both men and women aspired to limit to two to three children in India to reduce expenses related to care-taking, to provide adequate food, shelter, education, and opportunities to succeed (Rimal, 2015).

- **Child Loss Experience**

Child mortality in Ethiopia in 2000 was 77 per thousand live births and it was reduced to 31 in 2011. It has further reduced to 20 deaths per thousand live births in 2016 (CSA and ICF, 2017). High child mortality leads parents to demand for additional children to replace against losses (Bongaarts and Casterline, 2013; Phan, 2016). A study conducted in rural area of Southern Ethiopia also shows that mother who experienced child death has a tendency to increase level of fertility (Yohannis et al., 2004; Wubegzier and Alemayehu, 2011; Anteneh, 2015). Fertility preferences are also high in high child mortality areas for insurance and replacement effect since parents anticipate death occurrences to some of currently living children (Wubegzier and Alemayehu, 2011). The death of child leads to shorter birth interval through psychological reasons (stoppage of lactation) and supply effect (expectation of another death and replacement for the already died child).

Women with history of under-five child mortality were 3.57 times (AOR=3.57, 95% CI: 1.884, 6.779) more likely to have higher fertility than women who have no history of under-five child mortality. Women who have given their first birth below 18 years were 1.62 (AOR=1.62, 95% CI: 1.011-2.592) times more likely to have higher fertility than women who have given their first birth at 18 years and above, after adjusting for age of women, educational level of women, age at first marriage and history of under-five child mortality (Atsebaha., 2016).

- **Ideal Family Size**

According to (CSA et al., 2016), the average ideal number of children was 4.5 children, the intended waiting time for the next birth within 2 years was 17.5% and the desire for no children was 36% in Ethiopia. The desire for no more children was 40% and the ideal number of children being 4.1 in Oromia. The total fertility rate in Oromia was 5.4 in 2016, which is above the national average of 4.6. Oromia`s total fertility rate was the third highest next to Somali and Afar.

- **Age at First Marriage**

The median age at first marriage for women aged 25-49 in 2000 was 16 years which when disaggregated gives rise to 16.9 years for urban and 15.9 years for rural. The median age at first marriage among women age 25-49 in Ethiopia was 16.5 years in 2011 (CSA and ICF International, 2012). It was 18.1 years for urban and 16.3 years for rural women in the country. In 2016 the median

age at first marriage for the same age group became 17.1years (CSA and ICF, 2017). Women with long and medium durations of marriage were less likely, by 3.27 and 2.11 times respectively, than women with short duration of marriage to desire for more children (Susumanet et al., 2014).

The recent decline in fertility in Ethiopia is parts due to increasing age at first marriage and contraceptive use (Teller and Assefa, 2011). In Bangladesh, the desire for no more children is higher for women married before age 18 (Alamet et al., 2013). This might be because of the ample time available to achieve their desired family size early at their reproductive age.

- **Place of Residence**

In Ethiopia, according to (CSA and ICF, 2017), TFR varies between rural and urban areas where in the former it has declined from 6 children in 2000 to 5.2 children in 2016. In urban place of residence, TFR has reduced from 3 to 2.3 children per women over the same period. In Ethiopia, mean ideal number of children in urban areas was 3.8 in 2016; it was 4.6 in rural areas. The desire to limit child bearing was 30% for urban and 38% for rural areas. Women in rural areas in Butajira (South Ethiopia) have 1.3 times more children than urban areas (Wubegzier and Alemayehu, 2011). The reason for having less number of children in urban areas, according to Wubegzier and Alemayehu is the use of family planning and positive attitude towards smaller family size because of advance services, knowledge and improved access to media.

Some study evidence that urban women have lower TFR performance and fertility preferences than women of rural areas. However, study conducted in Pakistan Showed that place of residence has no effect on ideal number of children. A study undergone in Southern Ethiopia showed that women of rural settlers were 2.66 times more likely than urban dwellers to practice birth interval length less than 3 years (Samuel et al., 2011).

2.1.4. Biological Factors

- **Contraceptive Use**

Family planning is used for delaying birth or the first birth and stop child bearing when the desired family size is achieved. Child preference declines with increasing development which also leads to reduced actual fertility due to implementation of fertility regulation (Bongaarts and Casterline, 2013). The authors indicated that in order to achieve their intended levels of fertility, sexually active women

who are in the reproductive age must use contraception and/or undergo abortion to prevent unplanned pregnancies. However, substantial numbers of women in developing countries who do not want to get child are not using contraception.

Contraceptives can help women to decide the number and time they want to have children (Phan, 2016). The low level of contraceptive use and high fertility in Nigeria shows high fertility preferences (Babalolaet et al., 2015). Mothers who use any method of family planning services have longer durations of birth interval than those who have not used as study in Bangladesh confirms (Ahbabet et al., 2013).

The study conducted in amhara regional state of Ethiopia on fertility revealed that 98% of mothers heard at least one contraceptive method (Table 5). It was also investigated that 85% have positive attitude towards contraceptive use. However, only 16.3% of respondents who cannot read and write used modern contraceptive methods as compared to elementary and secondary educational levels (23.3% and 33.3%, respectively). The study also assured that 20% of currently married women practiced at least one method of contraceptive through their lifetime. Among the different contraceptive methods used, 19% of respondents practiced injectable, which was much average (31% and 38%, respectively).

- **Breast Feeding & Amenorrhea**

Breastfeeding still accounts for a major proportion of all fertility reduction, the typical birth interval being longer among populations that give suck. LAM is 98% effective throughout the primary half dozen months post-natal. The 3 criteria a girl should meet to use LAM properly are: 1) she should be amenorrheic since delivery; 2) she should be absolutely or nearly absolutely breast feeding; and 3) she should be within the initial half dozen months postnatal (Sarah P., & Jill , 2013)

LAM could be a natural defense against physiological state, in high-priced contraceptive, safe for mothers and supply ideal nutrition and defense against infection and sickness for infants. Worldwide, quite ninety you look after ladies throughout the post-partum amount want either to delay or limit their next pregnancies (WHO, 2015).

2.2. Summary of Literature

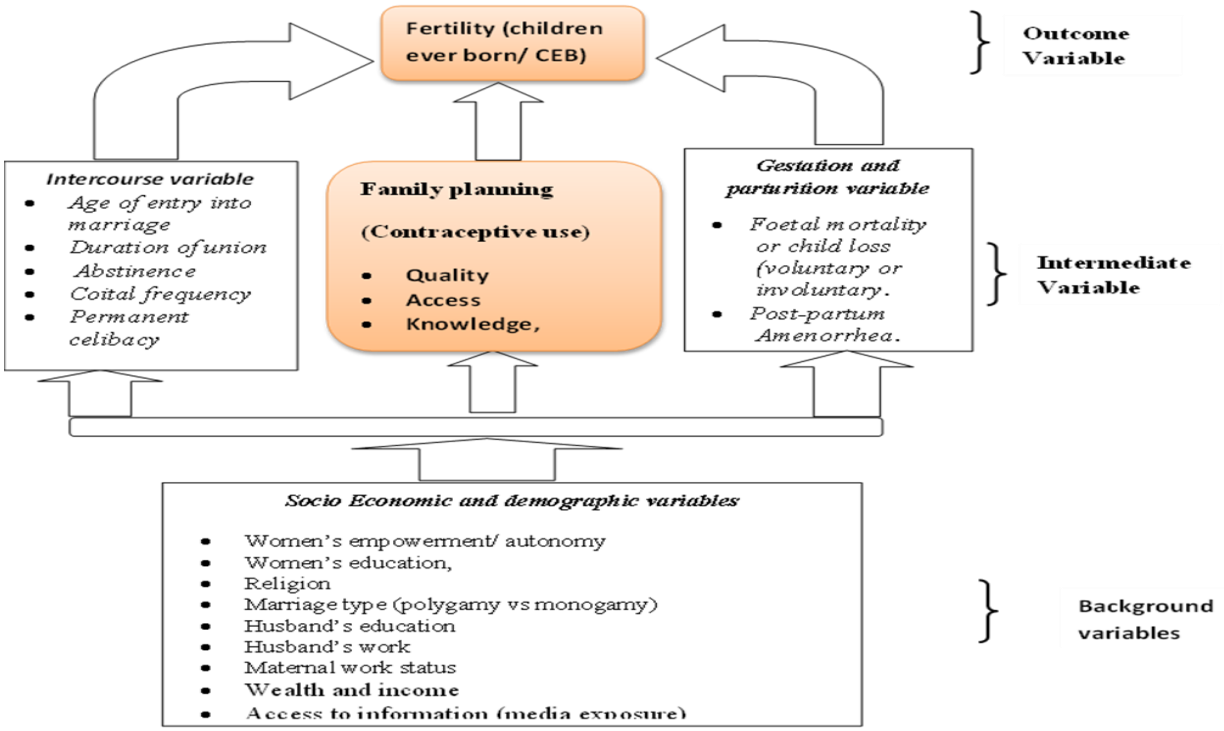
According to various studies, the desire for children is different across families from different cultural and educational backgrounds. Some will value the quality of the children over quantity as well as the associated costs of bearing them; whereas others see an opportunity to enhance marital solidarity. In developing countries, a large size family is the preferred option. Since these children represent an economic benefit who will later on take care of their parents due to the absence of social welfare institutions. On the opposite, higher income families favour fewer children because they demand quality children whom require time and a higher financial investment. It is globally acknowledged that a higher level of women's education is correlated to a desire for a smaller number of children. The findings of the 2016 EDHS report state that in Ethiopia, the more a woman is educated the less children she has (primary and secondary level vs. higher education).

Cultural and religious factors can affect the number of children; where a larger number of children can be viewed positively. There are fertility discrepancies between religious groups in Ethiopia. According to those literatures ethnicity also an important factor when it comes to fertility as the number of children varies greatly among different ethnic groups. The social status defined as employment status is critical for a couple in their decision to have a large or a small family. Also, the older generations tend to have a larger family as compared to the new generation who wish for a stable life over high fertility. Furthermore, the fertility level is linked to the infant mortality rate. The lower the rate the less likely parents are to demand a high number of children. Higher fertility rate is also correlated with early marriage. There is a gap between rural and urban areas when it comes to fertility rate. Due to a lower level of education and knowledge of contraceptive use, in rural areas we witness a higher level of fertility. Lastly, exclusive breastfeeding by a mother is an effective means to lower fertility rate.

2.3. Conceptual framework of the study

Establishing a coherent association between a wide range of factors/drivers and fertility is usually complex. Over the years, in view of understanding the dynamics of fertility, different scholars have tried to provide a very integrative and comprehensive conceptual framework. Among others, the theoretical framework proposed by (Davis and Blake, 1956), is the foundation for their predecessors, and is more appealing to the present context of Sub-Saharan African fertility. Davis and Blake, 1956

outlined two types of factors that determine human fertility: The "direct" or "proximate" determinants and "indirect" determinants or background factors. The background factors (socio-economic or structural variables) operate through the proximate determinants to influence fertility; they do not influence fertility directly. The proximate determinants are behavioral mechanisms that act to reduce fertility directly (Bongaarts and Potter, 1983). As shown in Figure 1 below, the background variables usually should pass through the proximate (i.e. the intermediate variables) to influence fertility.



Source: *Adapted from Davis and Blake, 1956; Bongaarts and Potter , 1983.*

Figure 1: Conceptual Frameworks for the Study of Determinants of Fertility

CHAPTER THREE

DATA AND METHODOLOGY

3.1. Study Area

Located in the Horn of Africa, Ethiopia is bordered with Djibouti, Eritrea, Kenya, Somalia, South Sudan and the Sudan. Ethiopia has an estimated area 1.1 million square kilometers. It has great geographical diversity, with high peaks ranging from 4620 meters above sea level (Mount Ras Dashen) to low depressions of 120 meter below sea level (Dallol depression). Ethiopia is the second most populous in Africa with estimated population of over 112 million, in 2019 (World Bank, 2019). In Ethiopia more than 80% live in rural areas, it has a broad geographical spectrum and over 80 distinct ethnic groups. Ethiopia's population is youth with 45% being under the age of 15 and 14.6% (13.2 million) being under the age of five (WHO, 2014).

Ethiopia has a federal system of government. The country is divided into nine administrative regions; and two city administrations. The regions are divided into zones, Woredas and kebeles which are the lowest units of administrations. The woreda is the most important local government structure, acting as the basis for most administrations and management. Currently there are 956 woredas, representing around 100,000 people for regional states and 16,542 kebeles (FMOH, 2014/15). With the average catchment population of 5000 people each.

3.2. Data Source

This study used the 2019 mini-EDHS dataset. It was the next survey data set from the 2016 Ethiopia Demographic and Health Survey (EDHS) which was the fourth demographic and health survey. The 2019 EDHS was conducted by the Central Statistical Agency (CSA) with support obtained from the Ministry of Health and the Ethiopian public health institute. The survey was carried out in Ethiopia, with the help of Measure DHS project, a USAID-funded project providing financial and technical support through the enforcement of population and health surveys in countries across the globe.

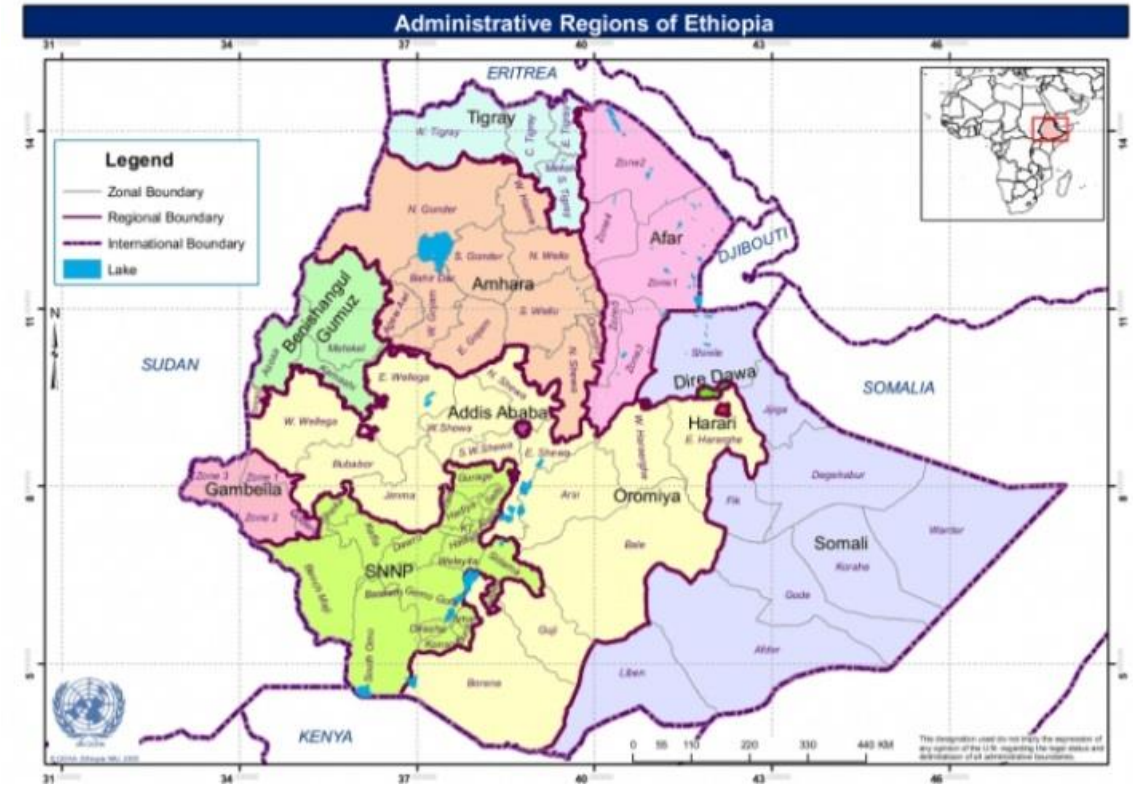


Fig 2: Administrative map of Ethiopia

3.3. Research Design

EDHS used a cross- sectional design in collecting the data. In cross- sectional design, information is collected at a specific time point in the lives of individuals.

3.4. Sample Size and Sampling Procedure

The sampling frame used for EMDHS 2019 could be a border of all census listing areas (EAs) created for the 2019MDHS and extend plan of 2019 Ethiopia population and housing census (PHS). This was showed by the Central Statistical Agency (CSA, 2019). This survey uses a census frame of 149,093 enumeration areas (EAs) created for the 2019 PHC. An EA could be defined as a geographic area covering an average of 131 households. Administratively, Ethiopia is divided into 9 nation-states and 2 administrative cities. Every region is sub-divided into zones, every zone into Woredas, every woreda into cities, and every city into kebeles So a total of 23007 reproductive aged women was participated in this survey. (CSA, 2019).

The sampling design for 2019 MEDHS used a two -stage stratified sampling selected in two stages. Stratification was conducted by separating every region into urban and rural areas. In total, 21 sampling strata were created as a result of the Addis Ababa region is entirely urban.

Implicit stratification and proportional allocation were achieved at each of the lower administration levels by sorting the sampling frame within each sampling stratum before sample selection, according to administrative units in different levels, and by means of a probability proportional to size choice at the first phase of sampling (CSA, 2019).

The sample allocation has been done through an equivalent allocation where 25 EAs are selected from eight areas. However, from the three large regions – Amhara, Oromia, and SNNP- 35 EAs for each were selected (CSA, 2019).

Samples of EAs were selected independently in every stratum in 2 stages. Among the primary stage a total of 305 EAs, 93 in urban and 212 in rural areas and in the second stage of selection, a fixed number of 30 households per cluster were chosen through an equal probability systematic selection from the newly created household listing created for the fourth (2019) population and housing census of Ethiopia. Each one among women aged 15-49 and each one among men aged 15-59, who were either permanent residents of the chosen households or visitors who stayed within the household the night prior to the survey, were qualified to be questioned (CSA 2019).

3.5. Source and Study Population

The source population of this study was all reproductive aged married or cohabiting women lived in Ethiopia whereas the study population for the study was the number of reproductive aged married or cohabiting women lived in Ethiopia who found in selected enumeration area.

3.6. Eligibility Criteria

Inclusion Criteria

All reproductive aged women who were either permanently residents of the selected households or visitors who stayed in the household the night before the survey was conducted are included in the 2019 mini-EDHS report

3.7. Variables and Measurements

3.7.1. Dependent Variable

The outcome variable of the study is children ever born, which is a count variable.

3.7.2. Independent Variable

Demographic variables

- ✓ **Age:** The age of respondent mother during the data collection. The age will be categorized into 5 years group. Which are 15-19; 20-24; 25-29; 30-34; 35-39; 40-44 and 45- 49.
- ✓ **Marital status:** the classification ad/or categorization of people in one of the marital unions: never married, married, separated, divorced and widowed. Number of living children this is self-explanatory. No need of description.
- ✓ **Household size:** refers to the number of each individual lived in the household. It will be categorized as less than or equal to 5; 6 up to 10 and greater than 10.

Socio-economic variables

- ✓ **Education:** refers to the highest level of education attended by a woman under investigation. It will be categorized into four levels: no education, primary school (1-8), secondary (9 -12) and higher.
- ✓ **Place of residence:** It is a woman`s usual place of residence (urban/rural) at the time of the survey.
- ✓ **Work status:** It will be categorized as not working versus working
- ✓ **Occupation:** Women's occupation refers to working status of women or the type of employment a woman was engaged in at the time of the survey.
- ✓ **Household wealth status:** The wealth index used in EDHS is used to measure household characteristics in the use of health, other services and health outcomes. It will be categorized as poorest, poorer, middle, richer and richest.
- ✓ **Religion:** The belief in supernatural power like God/Allah or other. It will be categorized as Orthodox, Protestant, Muslim, and Catholic and other if the respondents mention none of the above

- ✓ **Child loss experience:** refers to whether or not a woman ever faced child death in her life. Which will be categorized as yes and No.

Family planning and biological variables

- ✓ **Age at first marriage:** refers to the age in years when a woman married for the first time. It will be classified as less than 20; 20 -29; 30-39 and 40 and above.
- ✓ **Age at first birth:** refers to the age in years when the mother got the first child either or not the child alive at the time of data collection. It will be classified as less than 20; 20 -29; 30-39 and 40 and above.
- ✓ **Contraceptive Use:** refers to whether or not sexually active non pregnant currently married cohabiting women have been using contraception during the interview time.

3.8. Statistical Analysis

The descriptive statistics of the variables to be used in the study was conducted by using various statistical tools like means, standard deviations, frequencies, percentages,
Cross-tabs, etc., which was depicted/presented using tables, figures, pie charts, graphs, etc.

Given the outcome variable has count nature, the study used Poisson regression (Negative Binomial regression) to examine the determinants of fertility in Ethiopia. Taking the number of children ever born as a response variable **y** and cluster average of all independent variables (x1, x2, x3 …. xn) as predictor variables, the formula for Poisson regression is given by the following terms:

Where $\mathbf{Y= bo + B_1X_1 + B_2 X_2 + B\ _3X_3 + ……. + B_n\ Xn + e_o}$

Y is the predicted or expected value of the dependent variable and X_1 through X_n are equal to zero, b_1 through b_n are estimated regression coefficients and e is an error term. Each coefficient represents in the change Y for one unit change in the respective independent variable. All of the analysis process was conducted by using IBM SPSS version 26.

Multicolinearity: - the independent variable must not be related strongly to each other but to the outcome variable. The tolerance and its inverse, VIF (Variance Inflation Factor) respectively must not less than 0.1 and greater than 10.

Model fit:- the fitness of the model is checked by hosmer and lemshow test. The model fit only when

the test is insignificant (P-Value >0.05). All these assumptions were not violated for this study.

3.9. Ethical Consideration

The consent letter was obtained from the institutional research ethical committee (IREC) of Addis Ababa University College of development studies and the official letter will be taken and given to Ethiopian ministry of health to get the full reporting data of 2019 mini-EDHS.

Detailed information on the study area, study population, organization of the study, sampling design, questionnaires, data collection, data quality, data processing and ethical issues is published in the mini-Ethiopian demographic and health survey 2019 report (CSA, 2019). The author communicated with measure CSA and ICF international and permission will be granted to download and use the data for the proposed study.

3.10. Dissemination of the Result

The result was disseminated both with hard and soft copy to Addis Ababa university college of development studies, post graduate program. The result also was disseminated and accessed to other to employed as source of information to do further research and even to critique the finding and also was provided to Ethiopian public health institution, federal minister of health and Ethiopian central statistical agency. Also, document was established and published on local or international journal.

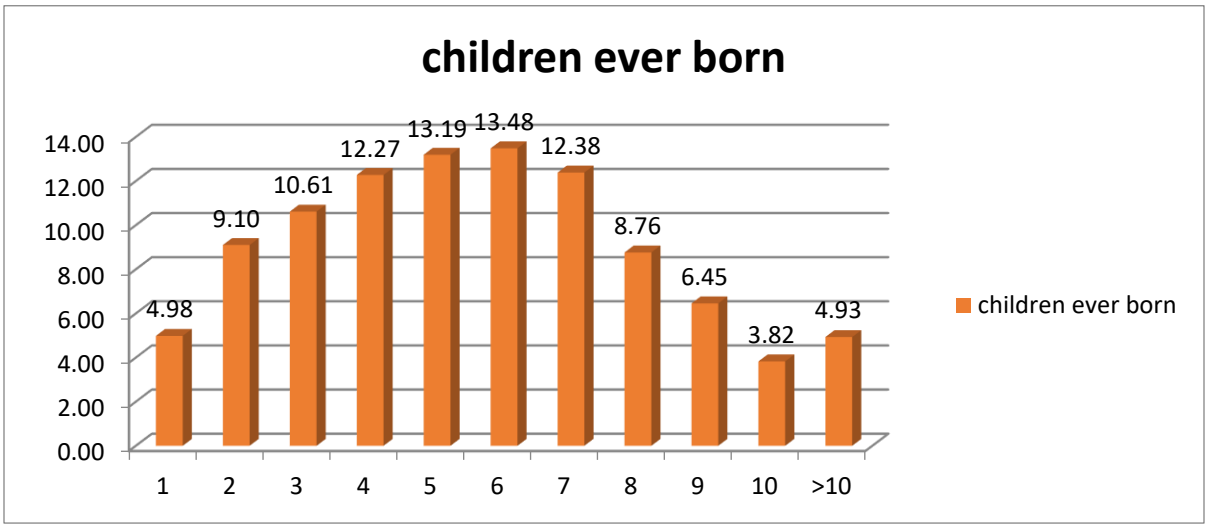
CHAPTER FOUR

PRESENTATION OF THE RESULT

In this section findings of the study was presented which encompass the frequency and percentage of dependent and independent variables under sub sections and the negative binominal regression result of association between the independent and outcome variables was also performed which is to be presented.

4.1. Spatial distribution of respondents by level of children ever born

The majority (13.48%) of reproductive aged women has 6 children ever born and 13.19% of participants have 5 children ever born.



Souce-2019 mini-EDHS report database

Figure 3: - level of children ever born among reproductive aged women in Ethiopia

4.2. Demographic and socioeconomic characteristics of the respondents

A total of 23007 reproductive aged women was included in this study, among the total respondents, the majority 4898 (21.3%) of the respondents were in the age group of 35-39 and 4583 (19.9%) of the participant were in the age group of 30-34. Based on marital status of the mother, 88.5 % of women were married and only 0.5 % of women were single based on age at first marriage, the majority (%) were starting their first marriage at the age grater then 18 years of age. Based on the place of residence of women, the majority (78.6%) of the participant were lived in rural area of the

country. From the wealth index categories of the household the majority of women were included in the poorest income category which was accounted to 30.4% of the participant followed by poorer and richest wealth index category which accounts to 18.4% and 18.6% of the participant respectively.

Table 1: - demographic and socio-economic characteristics of reproductive aged women in Ethiopia. (23007)

Variables		Frequency	Percent
Current age of mother	15-19	308	1.3
	20-24	1557	6.8
	25-29	4247	18.5
	30-34	4583	19.9
	35-39	4898	21.3
	40-44	4100	17.8
	45-49	3314	14.4
Place of residence	Urban	4922	21.4
	Rural	18085	78.6
Education	No education	15583	67.7
	Primary	5586	24.3
	Secondary	1193	5.2
	Higher	645	2.8
Religion	Orthodox	6999	30.4
	Catholic	201	0.9
	Protestant	4812	20.9
	Muslim	10682	46.4
	Traditional	224	1
	Other	89	0.4
Marital status	Never in union	121	0.5
	Married	20355	88.5
	Widowed	1019	4.4
	Divorced	1337	5.8
Wealth index	Poorest	6996	30.4
	Poorer	4234	18.4
	Middle	3831	16.7
	Richer	3666	15.9
	Richest	4280	18.6
Household have radio	No	16860	73.3
	Yes	5969	26.7
Household have TV	No	19219	83.5
	Yes	3610	16.5
Family size	1-4	4706	20.5

	5-8	14357	62.4
	9-12	3943	17.2

From the total participated reproductive aged women, the majority (67.7%) of participant were uneducated, and also 18.4% of women were completed primary level of education, only less than 9 % of the participant were completed secondary and higher level of education.

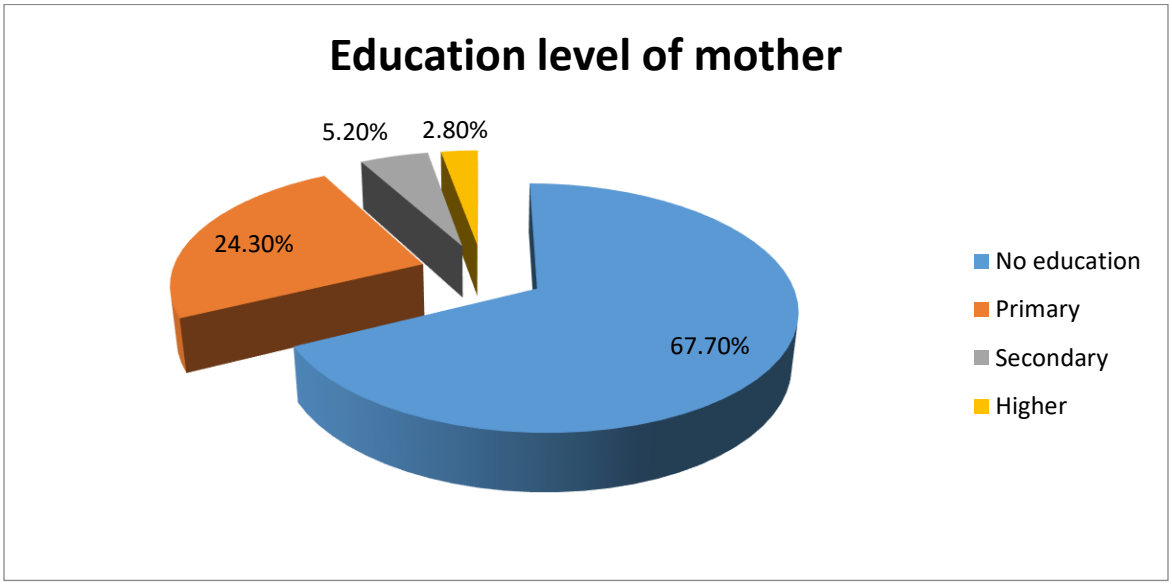


Figure 4: - highest educational attainment of respondents among of reproductive aged women in Ethiopia. (23007)

4.3. Family planning and Biological related characteristics of the respondents

From the total respondents, about 72.7% of respondents were heard about contraceptive methods and among those women's 27.6% were currently used at least one method of contraceptive methods. Based on the mother child loss experience history 38.9% of participants were exposed to a child loss at least once, from those mother 28.1% and 22.8% were had a son and daughter loss history respectively. Based on the duration of breast feeding practice, the majority (46.1%) of respondents was ever breast feed but not currently and 11.9% of mothers were not breast feed their child.

Table 2: -Family planning and biological related characteristics among reproductive aged women in Ethiopia.

Variables		Frequency	Percent
Contraceptive use	No	16662	72.40
	Yes	6345	27.60
Heard about the methods	No	6274	27.30
	yes	16733	72.70
Current breast feed	No	4648	20.19
	Yes	7982	34.71
Duration of breastfeed	Ever BF, not currently	3140	54.61
	Never breastfed	378	6.59
	Still breastfeeding	2235	38.81
Total number of sons	<2	12611	54.79
	2-5	9431	41.0
	≥6	965	4.20
Total number of daughters	<2	10606	46.11
	2-5	9847	42.79
	≥6	2554	11.10
Child loss experience	No	14059	61.10
	Yes	8948	38.91
Son loss experience	No	16534	71.89
	Yes	6473	28.10
Daughter loss experience	No	17770	77.20
	Yes	5237	22.80
Age at marriage	<20	9962	43.30
	20-29	10514	45.70
	30-39	2163	9.40
	≥40	368	1.60

From the total respondent, women's those have more than 12 children ever born all women was do not use any contraceptive method and 87% were had 12 children ever born. But from those women currently use any contraceptive methods the majority (40%) of women were had only one children ever born.

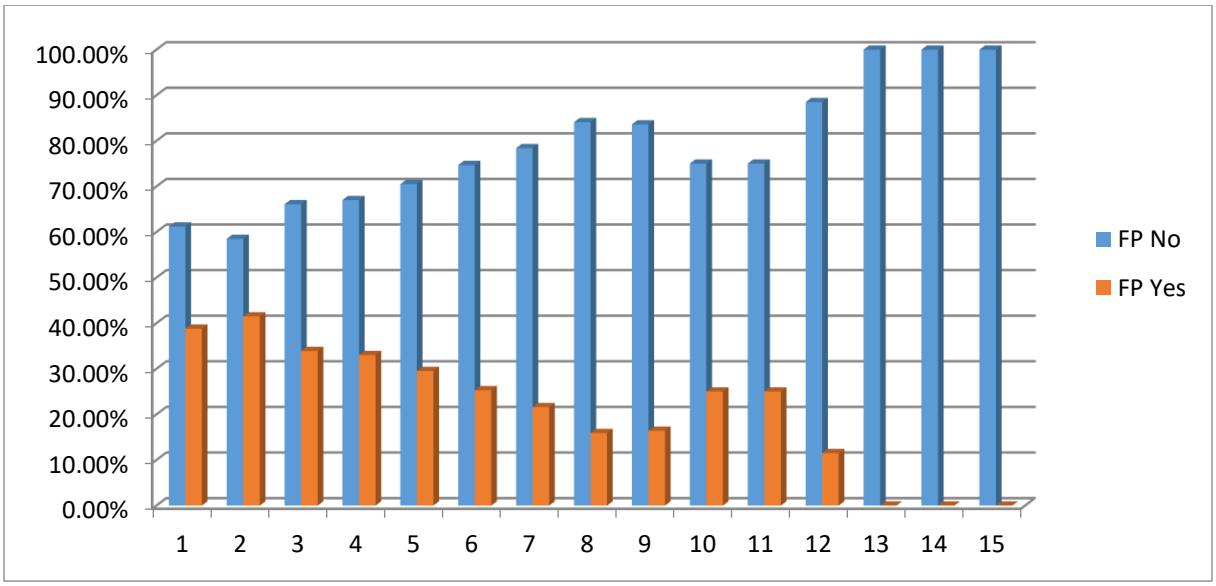


Figure 5: - Cross tabulated distribution of children ever born of mother with their contraceptive use among reproductive aged women in Ethiopia.

4.4. Factors affecting children ever born

The analysis of negative binomial regression technique was used to check the correlation of the dependent and independent variables, the direction of association and its strength. Out of the total 21 explanatory variables 12 variables was found to have a significant association at a level of significance less than 0.05. Currents age of mother, place of usual residence, education, households have television, wealth indexes religion and marital status was a demographic and socioeconomic factor those show a significant association with children ever born. From family planning and biological related factors women heard about contraceptive methods, status of contraceptive use, child loss experience, duration of breast feeding, age at first marriage, and mothers son loss experience was found to have a significant association with a children ever born of a mother. In this result section the interpretation of the finding was presented by adjusted incidence rate ratio, **p** value with their 95% confidence interval.

Education level of women had a decremental effect on the current fertility level of mother, i.e women complited grater than secondary level of education IRR=0.32 (95% CI= 0.21-0.78) means that women compliterd grater than secondary level of education, the number of children ever born decrease by 68% when compared to those uneducated women. Primary education IRR=0.76 (95% CI=0.26-1.13), implies that women were primary education, the number of children ever born decreased by 24,% when compared with to that of non educated mother. And also, mother completed secondary education IRR=0.45 (95% CI= 0.13-0.97), implies that women complited secondary level of education decrease the number of children ever born by 55% when compared with that of un educated mother. Place of usual residence (living in rural) has a significant effect on the number of children ever born the women had. Being a rural resident showed as IRR= 1.43 (95% CI=1.18-1.86), This implies that women lived in rural area compared to women lived in urban, living in rural increase the number of children ever born by 43% when compared to living in urban area. When we see the wealth index factor the poorer IRR= 0.71 (95% CI=0.52-0.98), which implies that being in the poorer income category decrease the number of children ever born by 29% when compared with the poorest income category, having middle wealth index IRR= 0.47 (95% CI= 0.34-0.67), which implies that women found in the middle wealth index decrease the number of children ever born by 53% compared with the poorest. Richer IRR=0.26 (95% CI= 0.19-0.38) and richest IRR= 0.13 (95% CI= 0.14-0.36) income category decrease the number of children ever born by 74% and 87% respectively when compared with that of poorest wealth index. Religion was found to have a significant effect on the number of children ever born. Muslim religion IRR= 5.20 (95% CI= 3.29-7.11) means that being Muslim religious women increase the number of children ever born by 20% when compared with orthodox religious women, protestant IRR= 1.82 (95% CI= 1.28-2.58) means that being protestant religious women increase the number of children ever born by 82% when compared with that of orthodox religion. Traditional religion IRR= 3.92 (95% CI= 1.17-13.12) and other religions IRR=5.70 (95% CI= 1.19-27.31) respectively implies that being traditional and other religious women increase the number of children ever born by 92% and 70% when compared with orthodox religious women. Women heard about family planning method, current use of contraceptive methods and child loss experience of mother were found to have a significant association with a number of children ever born. Women do not heard about family planning methods IRR=1.53 (95% CI= 1.23-1.99), implies that women do not heard about family planning methods increase the number of children ever born by 53% when compared to those women heard about family planning methods.

Women currently do not used contraceptive methods IRR= 1.49 (95% CI= 1.38-2.92), means that women those currently do not use contraceptive methods increase the number of children ever born by 49% when compared with those currently use any contraceptive methods. Mother those have a child loss experience IRR= 2.73 (95% CI= 1.23-10.53), means that mother had a child loss experience increase the number of children ever born by 73% when compared to those mother do not have any child loss history. Households those have television as a source of information about family planning and other health issues was found a significant association with a children ever born, households those have no television increase the number of children ever born by 42% , IRR= 1.42 with 95% CI=1.31-1.62, with compared with those women having television in their households.

Table 3: - Negative binomial regression result on factors affecting number of children ever born among reproductive aged women in Ethiopia.

		CIRR			AIRR	
Variables		IRR	95% CI	IRR	P-Value	95% CI
Place of residence	Urban					
	Rural	0.134	0.097-1.71	1.43	<0.0001	1.18-1.86
Education (no edu ref)	Primary	0.96	0.09-2.36	0.76	0.018	0.26-1.13
	Secondary	0.25	0.12-0.49	0.45	0.03	0.12-0.97
	Higher	0.69	0.43-0.88	0.32	0.03	0.21-0.78
Religion (Orthodox ref)	Muslim	8.89	6.57-9.89	5.2		3.97-7.11
	Protestant	3.49	2.69-4.54	1.82	0.01	1.28-2.58
	catholic	3.89	1.28-11.84	2.12	0.018	0.69-6.55
	Traditional	5.28	1.67-16.69	5.7	0.03	1.19-27.31
	Other	7.68	2.23-26.40	3.92	0.03	1.17-13.12
Marital status (single ref)	Married	4.09	1.32-12.85	3.19	<0.0001	1.21-9.32
	Widowed	2.57	0.67-6.57	1.79	<0.0001	0.41-5.29
	Divorced	2.4	1.52-7.49	2.3	<0.0001	1.11-9.76
Wealth index (poorest ref)	Poorer	0.59	0.45-0.79	0.71	0.04	0.52-0.98
	Middle	0.47	0.35-0.63	0.47	<0.0001	0.34-0.67
	Richer	0.23	0.17-0.31	0.26	<0.0001	0.19-0.38
	Richest	0.06	0.05-0.08	0.23	<0.0001	0.14-0.36
Household have television	Yes					
	No	1.87	1.67-2.04	1.42	0.03	1.31-1.62
Family size (<5 ref)	5-8	1.58	0.97-2.56	1.42	0.049	1.01-2.34
	>8	1.97	1.02-4.87	1.33	0.04	1.11-1.98
	No	1.87	1.13-2.56	1.49	0.01	1.38-2.92

Contraceptive use	Yes					
Heard about the methods	No	1.77	1.62-1.89	1.53	<0.0001	1.23-1.99
	Yes					
Duration of BF (Ever BF ref)	Never breastfed	1.17	1.06-1.63	1.87	0.01	1.67-3.17
	Still breastfeeding	0.97	0.21-1.68	0.79	0.04	0.18-1.63
Child loss experience	No					
	Yes	3.97	1.23-8.73	2.73	<0.0001	1.23-10.53
Son loss experience	No					
	Yes	2.16	1.05-5.65	1.6	<0.0001	0.65-6.59
Age at marriage	<18					
	≥18	0.86	0.23-1.98	0.63	0.01	0.11-1.54

CHAPTER FIVE

DISSCUTION

The study was conducted to check the correlation of outcome variable, currently fertility level of reproductive aged women in Ethiopia. With 20 independent variables whether or not the explanatory variables can have significant correlation with the outcome variables, out of 20 explanatory variables utilized to analyzed their effect on the children ever born. Only 13 variables were found to be statistically significant at level of $P < 0.05$ with the current fertility level.

When we saw the factors educational level of women, completed secondary and higher educational level makes the decreasing of probability of children ever born when compared to those with no formal education. This finding was consistent with the study conducted in Ethiopia 2016 EDHS on determinants of children ever born. Which shows that women completed primary and secondary education makes the number of children ever born increased (Zelalem, 2016), but research conducted in central Kenya using Kenya DHS report shows that completed primary level, secondary level and higher level of education decrease number of children ever born by 26%, 25% and 40% respectively (Mathenge, G.W, 2016)

Other research conducted in Egypt showed that education status of women has 2 less children than less educated women which means when education status of women increase, number of children ever born become decrease. All the above mentioned research showed that education status of women had decrement effect on the number of children ever born (Radovich,E., etal. 2018). The reason for this finding might be uneducated women do not have knowledge about the problem of large number of children can have on parents and themselves.

In the result, based on the place of usual residence of women's living in rural increase the likelihood of higher number of children ever born when compared to living in urban. Research done on Ethiopian demographic and health survey on factor affecting children ever born analysis in Ethiopia which shows living in rural increase the number of children ever born by 68% compared with women living in urban. The finding also supported by the research conducted in kenya DHS showed that living in rural increase the number of children by 10% (Mathenge, GW, 2016). This might be due to different reasons such as accessibility and level of awareness of women about family planning methods was not well in rural areas than urban. As well low level of women literacy and access of

information in rural than urban. In addition, in most developing countries peoples living in rural community considered their children as their property which means they believe that they are their care giver and source of income while they become aged.

Regarding religion, Muslim, protestant and other religion follower women intended to have greater than 4 children as compared to women from orthodox christian followers.The association was found strong in Jimma, Ethiopia (Badassa and sisay, 2001). In philiphines the odds for ideal number of children was 10.6% more for muslim women than catholic womens (Phan,2016). The ideal number number of children in Cambodia was found to be more for Muslim women increase the odds by 1.8 times than buddist women. This might be due to weak attitude toward using contraceptive methods base on religion of mothers stated in mini EDHS 2019 cross tabulated data for Ethiopia shows.

Monthly household expenduture was used as a proxy indicator of monthly household income, unlike the finding from Gondor study which was conducted in Northern Ethiopia, (Alene etal, 2008). Monthly household income was negatively associated with children ever born in this study. As monthly income increased, there appeared a progressive decrease in the level of current fertility of women. The finding also supported by the study conducted in Ghana. It showed that household had high wealth index and educated, their number of children were decreased when we go to the poorest and uneducated mother. Similar analysis conducted in Kenya, showed that being middle and rich wealth index family, decrease the amount of children ever born by 7% and 17% correspondingly when compared with the poorest family. (Mathenge,G.W, 2016).

Current marital status of women had been impact on fertility the married women were increased the number of children ever born by 79% when compared to those of single or unmarried or single women. This study was supported by the study conducted in Gondor zone in northwestern Ethiopia that married womenwere 1.62 times more likely to be under the risk of higher fertility compared to those women who were not in Union (Alene etal 2008). And also the study conducted in Kenya, married women have higher level of CEB than those women in never married (Mathenge,G.W, 2016). This might be due to the culture of the people does not encourage birth with out marriage and also higher exposure of pregnancy for women in marriage than thise in sinle or never in Union women.

The knowledge of women on contraceptive methods was one of the factor that had bearing on the level of fertility. Those women who were do not heard about family planning were 53% increase the

number of children ever born when compared with that of women heard about family planning methods. The grate majority of women (76%) was heard about any family plannig methods (CSA, 2019). Currently, the health service extention workers who are giving a door-to-door visit assigned in all rural and urban areas in all over the country. They make frequent visit to all house holds of their chatchment areas area to teach, persuade and motivate the mothers to adopt the new health actions. Moreover, they are expected to give the required health services including and giving contraceptive advice. Although this endeavor has been in place since 2005 GC there are still a lot of women who have not acquired the correct knowledge about contraceptive methods. Therefore, it is important to make periodic assessment whether these community-based health extention workers are performing in line with the set program.

As expected, contraceptive methods played a significant role in decreasing a level of fertility women who were not using contraceptive methods were likely have higher children ever born than those women supported by the use of family planning methods. The reason is women using contraceptive methods are aimed at either limiting child bearing or to space birth. The study conducted in different African countries such as study conducted in Ghana, Eretria and Kenya shows that women use contraceptive methods were 1.89, 3.2 and 2.3 times respectively less likely to have higher number of children than those women currently do not use contraceptive methods. (Gebremariyam. W.,2007; Mathenge,G.W, 2016)

Related to the ideal family size is the actual number of people live in the house including a number of biological children that men and women have. Studies show a decreasing a current fertility level of women as the number of people lived in the household increases. This result was supported by the study done in Uganda on determinant of fertility desire among married individuals showed that the proportion of women who would like to have another child decreased from 78.9% among theose with no children or small family size to 8.6% among those with 4 to 5 children and to 3.4% among those with 6 or more children (among those have higher family size). (Matovu., 2017). This might be due to low economic status of the community, number of houses need for another child, small space for living in the country. A large number of people lived in a single houses mighet decrease the need of a mother to have another child or a need to increase her fertility.

Based on the age of mother, the study revealed that the change of becoming high fertility increased with old age. Hence the age group of 25-29, 30-34 and 35-39 were 1.3, 1.8, and 2.6 times respectivy

more likely to have more than 4 children ever born than thise women in the age group of 15-19. This result was supported by the study conducted in Butagerira, Ethiopia which shows that in age group of 25-34 years accounts for 36.6% and the age grouo 35-49 years accounts for 72.2% (Ginji etal., 2018). So the number of children ever born increases significantly with increasing mother's age. This might be due to parental motivation to have a large number of children in many rural areas of the country and a norm of a society considering children as a source of labor and also might be due to marriage age decided by law not obeyed in many rural communities so the mothers start a child birth in their early age.

Strength and limitation of the study

The results from this analysis are based on a sample with national representation and a more recent study; therefore, are generalizable to all location of the country. Also, the application of a correlation and more rigorous decomposition analysis to determine factors contribute to current fertility level of women was strength of the study. There are also several limitations to this study, first their result was based on secondary data.

Secondly the analysis was based on a cross sectional survey that include questions that were answered retrospectively as such, causality not be established and there was uncertainty on the exact estimates as respondents were asked to recall past events. In addition, some of the data may have been under reported due to the discomfort of discussing sensetive topic such as age of the mother, child loss history. Besides these limitations, the study result remains valid and are useful for informing policies and practice as well as a basis for more research on children ever born.

CHAPTER SIX

Summary, Conclusion and Recommendation

6.1.Summary

Ethiopia is one of the sub sharan Africa countries characterized with declining but still has high population growth. The high population growth is attributed to the high demand of labor force in agriculture, the people belief that children are vital for old age security, household domestic chore and considered as blessing and reputation in areas that are tied strongly with traditions as this study and similar other studies reval. Fertility level of women can be expressed by a current level of fertility or a number of children ever born of a women, are the dependent variables explored in this study. This is to fill the gap as the study of children ever born is limited in Ethiopia in spite of its importance in predicting the actual fertility.

The objective of this study was to assess variables that thought to have correlationwith current fertility level of a women in Ethiopia. The children ever born was used as count variable with women having their children ever born range from one to fifteen. Negative binomial regression model was utilized to assess the correlation of all independent variable with the dependent variable. Based on the 2019 mini EDHS data, both the descriptive and analytical results were processed. Descriptive results were used to indicate the distribution of all demographic, socioeconomic and family planning and biological related factors and also cross tabulated result of some independent variable against the dependent variable.

The independent are categorical and continuous variables, those are age of women, level of education, contraceptive use, wealth status, number of living son, number of living daughter, place of residence, religion, marital status, child loss experience, source of information and women awerness about the methods of family plannig methods are the categorical variable. The independent variable is a count variable which is a continuous in nature. The predicted variable was the current fertility level of mothers were correlated by controlling the effect of other variables. According to the result obtained from regression analysis 13 independent variables were significantly associated with the independent variable.

6.2.Conclusion

The number of children ever born is an important predictor or that reflect the total fertility rate, considering the fact that Ethiopia is still expreiencing a high level of fertility rate. This study has identified the factors that significantly affect the reproductive age women level of current fertility. From those variables, current age of mother, educational attainment, marital status, and also place of usual residence is a significant demographic and socioeconomic predictor of children ever born.

From family planning related factor mother current status of contraceptive use and its knowledge and also mother experience of child loss is highly affecting the mother level of current fertility. Women completed secondary and higher level of education, family wealth index, gaining information about family planning and using of at least one methods contraceptive decrease the number of children ever born in Ethiopia. Which means those independent variables have negative correlation with the dependent variable, On the other hand living in rural areas, age of women and married women increase the number of children ever born in Ethiopia.

In Muslim, Protestant, Traditional and category of other religion there were variation for the increment of number of children ever born. Which means those independent variables have positive correlation with the dependent variable. It is important to take to familiarize the contraceptive use among mothers particularly the women who are young and placed in rural area and uneducated. To reduce a significant amount of current fertility level of women in Ethiopia, necessary to implement to the vulnerable group of women, moreover education and opportunity of living in rural areas are needed to increase to mitigate its problem.

6.3.Recommendation

1. Based kn the result of this study the following recommendation can be forwarded to jelp women to shift towards thier reasonable best level of current fertility.
2. Better level of women fertility could be achieved when womeb are supplied with contraceptive use and must therefore be encouraged by government health office's and non governmental organization working on reproductive health
3. Providing education to all women by regional education bureau, through adult education program this could shift their demand of high level of fertility and women awerness of the problem if high fertility and large family size.

4. It is important to focus by government health offices on Muslim mothers to help them to have reasonable level of fertility to protect the health of the mother and quality of children.
5. Educating women by health sercivce extention workers about the importance of contraceptive usage, birth spacing and the problem of high fertility to prevent high fertility level and also the importance of small family.
6. The importance of contraceptive methods is not as such accepted by rural women as compared to urban women and hence a lot of effort must be expected from government health offices and non-governmental organization working on those family planning and reproductive health issues.
7. Fertility preference and reproductive health related studies in ethiopia must be included in the education system at all level by combining women and men background information and the actual and the actual fertility at national level, so that the study will be meaningful.
8. Health providers particularly working on door to door especially in rural area should give detail health education about family planning, possible side effects since respondents of the undergone demographic health survey reports mentioned that reason for not intended to use contraceptive methods at this time and the future.
9. Fertility is not a work of only one sector but it needed a multisectoral approach especially education and health sectors including women and child affairs should give special attention to women to empowered them and for creating job opportunity for mothers especially in rural areas.

REFERENCE

Alate MM, Kakade SV, Patil DAM. (2019). Study of total children ever born in ever married women of India: regression approach. International Journal of Science & Healthcare Research. 2019; 4(1): 299-302.

Alene, GD., worku. 2008. differentials of fertility in north and south Gondor zone, northwest Ethiopia; BMC public health8,397(2008). https://doi.org/10.1186/1471-2458-8-397

Anteneh Mulugeta Eyasu. (2015). Multilevel modeling of determinants of fertility status of married women in Ethiopia. American Journal of Theoretical and Applied Statistics 2015;4(1):19-25.

Atsbaha G, Hailu D, Berhe H, Slassie AG, Yemane D, et al. (2016) Determinants of High Fertility among Ever Married Women in Enderta District, Tigray Region, Northern Ethiopia.JHealth Med Informat 7: 243. doi: 10.4172/2157-7420.1000243.

Bekele Belayihun. (2011). Determinants of high fertility status among married women: A case control study. Haromaya University, Ethiopia, 2011.

Bodassa. T., and Sisay. A. (2001). Are more Children a blessed? Determinants of demand for children in Jimma, Ethiopia, International conference on Africa Development Archieve Page 33.

Bongaarts J. and R. G. Potter. (1983). Studies in Population. *Fertility, Biology, and Behavior: An Analysis of the Proximate Determinants.*; 1983.

Bongaarts John and Casterline John (2013). Fertility Transition: Is sub-Saharan Africa Different. The Population Council, Inc. Population and Development review, 38: 153–168.

Casterline John B. and Han Siqi (2017). Unrealized fertility: Fertility desires at the end of the reproductive career, A peer reviewed open access journal of population sciences, 36 (14): 427-454

Central Statistical Agency (2006). Ethiopia Demographic and Health Survey 2005. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ORC Macro.

Central Statistical Agency (2012). Ethiopia Demographic and Health Survey 2011. Addis Ababa, Ethiopia and Calverton, Maryland, USA: Central Statistical Agency and ICF International.

Central Statistical Agency (2013). Population projections for Ethiopia (2007-2013), Addis Ababa

Central Statistical Agency (2016). Ethiopia Demographic and Health Survey 2016. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF

Cleland, John (2006). Family planning: The unfinished agenda The Lancet, 368(9549):1810–1827

Deneke Dana (2015). An Assessment of Fertility and its Determinants in DamotWoydeWoreda, Wolaita Zone; Ethiopia, International Journal of Humanities and Social Science, 5(9):63-72.

Easterlin R.A. An Economic Framework for Fertility Analysis. *Stud Fam Plann*. 975;6(54):62.

Friedman Debra, Hechter Michael and Kanazawa Satoshi (1994). A Theory of the Value of Children, Demography, Published by: Springer on behalf of the Population Association of America, 31(3): 384-387

Gebremariam. W. (2007). women's status and reproductive preference in Eritrea. Max planck Institute for Demographic research, working paper No. 2007-023.

GebremariamWoldemicael (2007). Women's Status and Reproductive Preferences in Eritrea, Max Planck Institute for Demographic Research, Working Paper No. 2007-023.

Gonji Arega, BB. Yalewele., JA., (2018) determinants of fertility among reproductive age women in gonji- kola district of Amhara regional state, Ethiopia.

Hailemariam Teklu, Alula Sebhatu, Tesfayi Gebreselassie.(2013). Components of fertility change in Ethiopia: Further analysis of the 2000, 2005, and 2011 demographic and health surveys, ICF International Calverton, Maryland USA. MoFED and UNICEF Addis Ababa, Ethiopia, 2013.

Jone Larry E., Schoonbroodt Alice and TertiltMich`ele (2008). Fertility Theories: Can They Explain the Negative Fertility-Income Relationship?

Lai MunSim (2012). When having many children pays: a case study from Taiwan, Journal of Population Economics, The Springer, 25(1):329-330.

Mansour Shawky (2015). The Effects of Population Characteristics on Fertility Preferences in Eastern Delta Governorates, Egypt: A GIS Based of Spatial Local Modelling, American Journal of Geographic Information System, 4(3): 105-120.

Mason Karen Oppenheium (1992). Culture and the Fertility Transition: Thoughts on Theories of Fertility Decline, Genus, 48(3/4): 5-7.

Masoud Faisal Abed, Zanoun (2009). Fertility preferences of the Arab population in the West Bank, Glasgow, UK.

Mathenge,GW and JItriomid.(2016). The Role of education in Cenrtal provience if kenya, kenya statistics soutg Africa, 2016

Matovu . JKB ., Makumbi, F, wanyenze RK etal. (2017). Determunants of fertility desire among married individual in Rakai, uganda; a cross sectional study. Reprod Health 14, 2(2017). https://doi.org/10.1186/s/2978-016-0272-3

Maytan Amelia Joneydi (2014). An Analysis of Women‘s Numeric Fertility Preferences in Niger, West Africa: 2012 DHS, Paper Presented at North Carolina, Chapel Hill, NC.

Mekonnen Tadesse, Alem Mekonnen, Ahmed Mohammed, Negash Tekelu. (2014). Levels, trends, and determinants of fertility and family planning in Amhara. In-depth analysis of EDHS, policy brief, 2014.

Nauck Bernhard (2014). Value of Children and the Social Production of Welfare, Demographic Research, Peer-Reviewed Open Access Journal of Population Sciences 30(66):1793-1824

Office of the Prime Minister (1993). National Population Policy of Ethiopia, Addis Ababa

Palamuleni Martin E. (2014). Social and Economic factors affecting Ethnic Fertility differentials in Malawi, North West University Mafikeng Campus, South Africa,International Journal of Development and Sustainability, 3(1):70-88,

Phan Ly Dieu (2016). Women‘s Empowerment and Fertility Preferences in Southeast Asia, Unpublished Dissertation, University of Sydney.

Radovich,E., etal.(2018). Rising up; fertility trends in Egypt before and after the revolution. PLoS Onr,2018. 13(1):P.e0190148.

Samuel Yohannes, Mekitie Wondafrash, Mulumebet Abera and Eshetu Girma (2011). Duration and determinants of birth interval among women of child bearing age in Southern Ethiopia, BMC pregnancy and child birth,11(38): 1-6

Sennott Christie and Yeatman Sara (2012). Stability and Change in Fertility Preferences Among Young Women in Malawi, International Perspectives on Sexual and Reproductive Health, 38(1): 34–42.

Susuman A Sathiya, Bado Aristide and LailuloYishak Abraham (2014). Promoting family planning use after childbirth and desire to limit childbearing in Ethiopia, Reproductive health journal, 1(53): 1-8.

Teklu Hailemariam; Alula Sebhatu;Tesfayi Gebreselassie. (2013). Components of Fertility Change in Ethiopia.Further Analysis of the 2000, 2005, and 2011 Demographic and Health Surveys. DHS Further Analysis Reports No.80. Calverton, Maryland, USA: ICF International; 2013.

Teller Charles and Assefa Hailamariam (2011). The Demographic Transition and Development in Africa: the Unique Case of Ethiopia, The Springer.

Upadhyay HP, (2017). Bhandari KR, Factors Associated with Children Ever Born: A Case Study of Somadi Village Development Committee of Palpa District, Nepal, Adv J Soc Sci 2017;1(1) :15-29.

Upadhyay Ushma D. and Karasek Deborah (2012). Women's Empowerment and Ideal Family Size: An Examination of DHS Empowerment Measures in Sub-Saharan Africa, International Perspectives on Sexual and Reproductive Health, 38(2): 78–89

Vlassoff M. (1982). Economic Utility of Children and Fertility in Rural India Population Studies, Taylor & Francis, Ltd. on behalf of the Population Investigation Committee. 36(1):45- 59.

World Bank. (2019). Population Growth - Annual. https://data.worldbank.org/indicator/SP.POP.GROW? Locations=ET. Published 2019.

Wubegzier Mekonnen and AlemayehuWorku (2011). Determinants of fertility in rural Ethiopia: the case of Butajira Demographic Surveillance System (DSS), BMC Public Health,11(782):1-6. .

Zelalem Yitayal Melese, Likinaw Bewuket Zeleke. (2020). Factors Affecting Children Ever Born Among Reproductive Aged Women in Ethiopia; Data from Edhs 2016. World Journal of Public Health. Vol. 5, No. 3, 2020, pp. 66-75. doi: 10.11648/j.wjph.20200503.14