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What explains Married Women Labour Force participation in Ethiopia? An application of Multinomial Probit Model

By Delina Guesh

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Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for The Degree of Master of Science in Economics School of Economics

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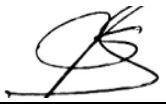
Signature: 

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DECLARATION

I, Delina Guesh Hailu declare that, this study, What Explains Married Women Labour Force Participation in Ethiopia is my own work. I have undertaken the research work independently with the guidance and support of the research advisor. This study has not been submitted for any degree or diploma program in this or any other institution. It is in partial fulfillment for the requirement of the program for the degree of Master of Science in Developmental Economics. All sources of material used for the research have been acknowledged.

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Date: June, 2021

ENDORSEMENT

This thesis has been submitted to Addis Ababa University, Collage of Business and Economics for examination with my approval as a university advisor.

Advisor: Mesele Araya (PhD)

Signature: 

Date: June, 2021

June, 2021

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COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

Board of Examiners Approval Sheet

As members of board of examining of the final MSc thesis, we certify that we have read and evaluated the Thesis prepared by Delina Guesh entitled What Explains Married Women Labour Force Participation in Ethiopia. It is accepted as fulfilling the thesis requirement for the degree of Master of Science and Developmental Economics.

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ABSTRACT

Married women labour force participation has attracted the attention of many studies worldwide. There is however little empirical studies on the socio and economic factors that attribute to married women labour force participation in Ethiopia. This study aims to examine the factors that explain married women's labour force participation and employment using a national representative of Welfare Monitoring Survey (WMS). So far Ethiopia conducted five WMS starting in 1995 and the latest one conducted in 2015/16. This study makes use of the 2015/16 Welfare Monitoring Survey that covered all rural and urban parts of the country. This study, applied a multinomial probit model to investigate the socio demographic and economic characteristic determinants of married women labour force participation.

The results show that married women's is less likely to participate in the formal labour market if her husband has formal employment. That is, when a husband is employed in a waged employment, the labour force participation of married women decreases by 0.1%. As the number of children increases in a household married women labour force participation tends to increase by 0.7%. The regression results suggest that literate married women to be engage in Industry and Service employment are less likely to increase comparing to Agricultural Sector. Age is prolonged to likely increase married female labour force participation by 0.2% even though it is expected to have a diminishing effect at a certain level of age category.

It has been recommended that, education has a very high positive effect on married women labour force participation. Policies that promote education and create more job opportunities should be implemented. For example, re-schooling or training of the less educated married women, increasing vocational training and labour market information. This would encourage more married women to go to work, and thus generate the income required that would enable more families in the regions to be able to increase their living standards. The married women labour should also be given more attention in employment creation. This intervention however, should not focus only on urban areas otherwise, they will create imbalance in rural-urban married women labour force employment opportunities.

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List of Acronyms and Abbreviations

COMESA	Common Market for Eastern and Southern Africa
CSA	Central Statistical Agency
EAMA	Executive Agency Maritime Administration
EAs	Enumeration Areas
EU	European Union
GTP	Growth and Transformation Plan
HH	Household
ILO	International Labour Organization
IV	Instrumental Variable
LDCs	Least Developing Countries
LFP	Labour force participation
MFI	Micro Finance Institution
MFLF	Married Female Labour Force Participation
MFLFP	Married Female Labour Force Participation
MNP	Multinomial Probit Model
MoWCA	Ethiopian Ministry of Women and Children Affairs
PPS	Probability Proportional to Size
PSUs	Primary Sampling Units
RK	Rural Kebele
SSUs	Secondary Sampling Units
UDKs	Urban Dweller's Kebeles
UK	Urban Kebele
UN	United Nations
WB	World Bank
WMS	Welfare Monetary Survey

CHAPTER 1

1. Introduction

1.1 Background of the study

Women employment plays a vital role in economic activities as it benefits women and their families. In most countries, women contribution to production both quantitatively in labour force participation and qualitatively in education is less than men even though women constitute about half of any country's population. (Lawanson, 2008).

One of the most fundamental goals of development efforts in the economy is the full involvement of women into the economy. Hence, the equity and effectiveness in eliminating gender inequalities in primary and secondary education has a desirable goal in improving maternal health, reduce child mortality and promote gender equality, and above all, empower women. However, women are still underrepresented and underpaid in both developed and developing countries (Charles et al., 2009). Female labour force participation (LFP) is an important factor for growth and has a significant effect on development (Verick, 2014). According to WB (2019), a higher level of Female labour force participation (LFP) indicates a higher return on human capital and education. As AFDB (2015) stated, women have significant role in agricultural activities in Africa as they own third agricultural farms and make up to about 70% of the total employees. In this regard, women participation in the labour force is important in African countries where women are more active as economic agents than anywhere else in the world.

According to ILO (2010), in most developing countries, and in sub-Sahara Africa in particular, the most affected groups in job crisis are women, young people, the disabled and the elderly. Only a small percentage of women work in the formal sectors like in teaching, nursing, mining services, manufacturing and lower-level clerical jobs where as the majority of African women workers dominate the informal sectors such as unpaid agricultural work, food processing, street selling, insignificant cross-border trading, marketing of processed and semi-processed agricultural products and household domestic duties.

In the formal or informal sector, the decision of the wife in participating in unpaid housework is assumed to be made within the context of the welfare of the family and considered as it maximizes family utility function (Becker, 1965). It was Mincer (1962) who first pointed out that in the case of women, one should differentiate between work at home and leisure. Although work in the home is work without direct payment, production in the home like cooking, time spent with children, etc. can to some extent be substituted with purchased market goods and baby sitters. This model is the very early choice between "leisure" and work for pay, by having work defined as work in the home (unpaid) and paid work in the formal and informal sectors.

The potential wage from paid work as well as the personal and household attributes of the individual woman, will affect how they allocate their time between the paid labour market and unpaid activities. A number of these "supply-side" models, beginning with Mincer (1962), include proxy variables for personal and household characteristics which includes educational levels, representing human capital, migration status and age. Age is often considered to be a proxy for labour market experience and used to capture a possible effect of changing attitudes toward work outside the home by younger women. Spending much time in one area may increase knowledge of job and connections, and some studies have found the effects of migration to a new area has a positive contribution and others found it to be negatively related to women's labour force participation (Sandell, 1977, Shields and Shields, 1989, Pong, 1991).

According to Cohen (1970), the presence of children under 6 years old has the largest effect of any factor in determining labour force participation of married women. Garcia and de Oliveira (1994) also stated that the presence of children under 3 years significantly decreased the rate of married women's labour force participation. Other family income is also expected to affect the woman's work decision. Thus, the presence of children and other family income are expected to be significant in the household.

In most studies, other household income is defined to only include the husband's income, as in developed countries extended families and working children usually do not all live in the same household, however in most developing countries like Ethiopia, where extended families frequently form the household and children may begin contributing income at a relatively young age the wives

wage may be a substitute for the husband's, children's and other household wages may be complementary.

As Garcia and de Oliveira (1994) stated, for the most part, women's labour force participation was in response to family need. The husband's income being a key variable to explain women's work and very rarely was it due to the woman seeking personal fulfillment.

Despite the fact that there are opportunities available to women to be engaged in the labour force (LF), female participation is limited in certain occupation and there is restriction in attaining managerial positions and contend with maternity decision and family tradeoff (Murraly et al., 2007). In addition to this, much research is not conducted in this area to show why married women labour force participation is low despite its crucial importance especially in developing countries.

Thus, the main objective of this research is to highlight what explains married women labour force participation in Ethiopia and examines the effect of both supply and demand factors on the labour participation decision and in which of these sectors a married woman will participate.

1.2 Statement of the problem

As many developing countries, in Ethiopia, housework is considered to be the main activity of married women. According to Sathar (1993), there is a segregation of one's time allocation based on sex, in which, men work for wages generally outside their home while women and daughters have overlapping household chores without any wages. Along with chores, a little ratio of women participates in economic activity is noticeable. However, the high number of them is involved in the informal sector. Educated women are started to realize to return to keep on their education and join the labour force. Educated women with a professional experience who are in fact a very small ratio, share economic activity in their respective professions.

The legal status of females correlates with aspirations of work. Some women had work experience before their marriage, as they need relatively less responsibilities of household chores or child-care of their youngers. Sometimes girls feel free after their education and before they got married they temporarily participate in economic activity whereas some women engaged in the labour force to make savings for their dowry that is regarded necessary for marriage. Prior to marriage, girls feel happy to be participated in the work as they have the chance to develop many friendships and communicate freely among themselves (see also Jasmin 2000 for Bangladesh). Moreover, they're

happy because work means they may have the choice of a good spouse and they don't have the duty to get married at a young age.

In regard to female labour force participation both in formal and the informal sectors, different studies show that the choice of occupation mainly depends on factors like education, training, capital requirements, premises, the number of young children and expected earnings, and women are disproportionately concentrated in certain activities, with limited access to more remunerative enteprises (ILO, 1999). These factors restrict women to trade, labour and other businesses in both the formal and the informal sectors and restrict them from other activities.

The ILO report (ILO/EAMA T, 1999) states that women's participation in specific sectors and activities is quite low. Although the main characteristics of women-owned enteprises are very profound; they start small in number and grow more slowly than men-owncd enterprises. Women in developing countries mostly stay in the home and relied on less skilled and unpaid workers, and they are less likely diversified and involved into other activities. According to McCormick and Mitullah (1995), women's activities tend to be less remunerative than men's. In countries like Ethiopia, women constitute the majority of the poor among the total population, while at the same time they constitute a larger proportion of the household heads (CSA,2009).

However, Information regarding the women's participation decisions in different sectors is important, surveys undetaken by CSA only provided statistical data on the men's and women's magnitude and contribution in the national economy. In this regard much is not known about the factors that explain women labour force participation in different sectors, especially by married women, given that there are alternative sectors in the labour market.

In other words, knowing the factors that make married women's participation decisions in different sector are important, there is no detail analysis on married women labour force participation in both formal and informal sectors and its significance in Ethiopia. In order to understand the various determinants of married female's participation in the labour force we need to consider the effects of demographic and socio-economic factors that influence female labour force participation. To do this, simple bivariate and multivariate analyses will be carried out to examine the strength as well as the direction of influence of these factors on the aforesaid phenomenon.

1.3 Research Gaps

There are several empirical studies on the socio and economic factors that attribute married women labour force participation.

To mention few of them:

- Anbreen Bibi and Asma Afzal, **(**2012) concluded that married women's age in Pakistan negatively affect the decision of married women to participate in the labor force.
- Lim Fui Yee Beatrice, (2017) uses Logit model and concluded that to increase married female labour force participation in Malaysia investment in education should continue to be the country's priority.
- Burak Darici and Mehmet Tasci, (2010) also found for both married and non-married women in Turkey there is an inverse U-shaped relationship between age and labour force participation.

In regard to the above statements, the major gap this research found is that much is not known about the factors that explain married women labour force participation in different sectors in Ethiopia given that there are alternative sectors in the labour market.

1.4 Research Questions and Objectives

The main objective of this study is to conduct an empirical investigation on the factors that influence the decision of married women to participate in the labour force activities in Ethiopia.

The principal features of the study are the following questions that we seek to answer:

i) To what extent married women's labour force participation is sensitive to their age, education, and headship of the household?

ii) Does distance from school has a significant impact on married women literacy rate and what is the likelihood of married women labour force participation affected by their literacy rate?

iii) In what way do the characteristics of the head of household such as age, literacy Status and husband's employment affect the labour force participation of married women?

iv) What is the likelihood of the labour force participation of married women being affected by both supply and demand factors and in which sectors a married woman will participate on?

1.5 significance of the study

This study has the purpose of identifying the major contributing risk factors that limit the number and magnitude of married women employment at the workplace in Ethiopia. Understanding the different factors in female labour supply is crucial in targeting effective policy interventions to enable all women to participate in the job market, and to achieve the policy goal of increase married female labour force participation (MFLFP).

So, this study intended to create awareness for governmental and non-governmental organizations to take intervention measures and set appropriate plans to improve the existing level of participation of married women at workplace. The findings or results obtained from this research could also be useful in many ways. The findings could also be helpful for policy making, monitoring and evaluation activities of the government and different concerned agencies. The study also aims to provide additional information for policy makers to develop effective counter measures that could maximize the number and magnitude of married women at the workplace and distribution of manpower for surveillance.

Finally, it also helps to carry out further research to refine the conceptual and methodology of the present study.

1.6 Scope and Limitation of the Study

Using data from the year 2015/16 Welfare Monitoring Survey covered all rural and urban parts of the country. Unlike, the previous Welfare Monitoring Survey this survey fully covered both the sedentary as well as the pastoralist areas of Somali and Afar regions. This is the socio-demographic and economic characteristics of Married female force participation; such as age, marital status, education status etc. we have a total population observation of 20,786 of married women in the study.

Although this study is relevant and has its empirical merit, there are limitations that could be considered in future research on female labour force participation in Ethiopia. The limitations in this study arise mainly from data limitations. The dataset used in this study provides information on labour force participation and employment status. However, information on earnings and

hours of work, for example, was not available in the dataset. Therefore, the choice of labour market outcomes in this study was limited to labour force participation.

1.7 Organization of the Paper

The remaining part of the study is organized as follows; In chapter two theoretical and empirical literatures are reviewed. Following that, chapter three gives a clear over view of data and methodology. Chapter four presents and discusses the results of both the descriptive and econometrics analysis. The last chapter five presents conclusions and recommendations of the research.

CHAPTER 2

LITERATURE REVIEW

2.1 Theoretical Literature Review

2.1.1 Definitions and Concepts

2.1.1.1 The Concept of Labour Force Participation and Its Approach in Developing Countries

McConnell, Brue and Campbell (2009, p. 59) argue that "age-eligible population labour force participation rate is determined by comparing the actual labour force with the potential labour force. In the United States the actual labour force consists of people who are employed and those who are unemployed but who are actively looking for a job, which excludes young people under 16 years of age and people who are established in practice or custom, such as a hospital for people with mental or emotional problems or nursing homes or over age 64.

The concept of labour force in Indonesia refers to the international labour Organization definition which classified working-age population that engages actively in the labour market, either by working or looking for work; it provides an indication of the size of the supply of labour available to engage in the production of goods and services, relative to the population at working age. (Indonesia BPS, 2006). The female labour force participation rate is defined as the proportion of the female population of working age who are employed and self-employed and who are seeking work.

However, the concept is really hard when it is applied in developing countries because of the problem in defining the concepts of work and non-work in a subsistence economy. Since both formal and informal sectors are combined in developing countries, it is hard for western researchers to make the distinction between these two types of works. For instance, in the case of Ethiopia, many married women may work in the field growing vegetables as well as taking care of the children. The usage of terms like cash and non-cash production in agricultural economy seems to be obscure. During this society, a family may produce goods for its own consumption also on share with other relatives or to sell within the traditional market. The

concept of labour force has been criticized in recent years, particularly in reference to developing countries, in terms of its inaccuracy and incompleteness in measuring female labour (Anker et al, 1987).

In fact, the concept of labour force based on known statistics classifies females particularly in uncivilized areas as "the economically inactive" labour force. The inaccuracy of the concept of female participation in the labour force is due to a number of factors: the quality or biases of the questionnaires; the biases of male responses or the lack of knowledge on the part of the authority to represent someone else, especially in voting respondents; poorly constructed questionnaires; Finally, to a misunderstanding of the notion of labour force participation rate (Anker et al 1987).

Anker, Khan and Gupta (1988) also pointed out that the international definition of labour force seems to be biased if it is applied to the less developed countries. The United Nations states in its national account that the labour force consists of persons of either sex who furnish the supply of labour for the production of economic goods and services (Anker, Khan and Gupta 1988). The United Nations' definition of labour force is that all production of goods and services can be classified into "economic" (labour force) activity while activities outside the production of "goods and services" are classified as non-economic (non- labour force) activities. All market-oriented activities related to salary or wage employment are considered as labour force activities. Thus, consistent with the United Nations definition above, all the products and services production of primary products, whether or not they are going to be sold into the market or not for barter and self-consumption like in subsistence-agriculture, are included with in the concept of labour force activities.

With reference to the measurement of female labour force participation, Durand (1975) classified female labour force participation regarding to industry sectors or occupation, expressed by the number of girls who are employed during a given sector as a percentage of the entire of females of working age. Basically, the female labour force participation rate is that the ratio of two numbers: between the females who are classified as economically active in the labour force and the females inactive in the labour force. Economically active females include those who are employed and those who are unemployed but trying to find work. This also includes women who already with in the labour force plus the inactive population. The

inactive population excludes unemployed persons like children, inmates of institution, the disabled and the elderly.

Therefore, the acceptable definition of female labour force participation is that the percentage of the female population that has worked within the reference period or is willing to engage in work. For instance, suppose that the Ethiopian female labour force participation rate is 50%. This suggests that half the female population in Ethiopia works and the other (50%) is not working. However, it does not necessarily mean that half of the individuals are always in the labour force and the rest is never in the labour force. It probably means same individual is ones in labour force and other times out of the labour force (Mincer, 1962).

It gives the impression that even if it is easy to define labour force, the estimation of the labour force participation rate becomes controversial, particularly in LDCs. Obviously, and economists often associate the labour force with paid work. This is often because the way labour force is defined, namely: 'labour force is part of the population which is engaged in the production of economic goods and services. In fact, the role of the unpaid family workers who predominantly engage in the informal sector and within the traditional agriculture sector, in which the women's role is important, is critical for the country's economy.

Among economists, there's still debate on whether or not the concept of labour force participation is suitable as a measure of performance of labour in LDCs. Myrdal (1970) criticized the utilization of labour force participation as an idea to measure the degree of workers within the labour market in LDCs. Consistent with to Myrdal the notion of labour force participation is merely applicable in developed countries, not in LDCs, because it fails to require under consideration variations in labour efficiency. For instance, in developed countries the labour force participation are often determined by using standardized conditions like age. In LDCs, however, large age variations exist in the labour force. In Indonesia it is normal for kids under 15 years old (child labour) to participate in the labour market. Poor families have many children. They have to work and earn money in order to help sustain their families, so many of them withdraw from school. Furthermore, while in developed countries the demand and supply in the labour market works perfect, the labour market in developing countries is very imperfect.

This explains that the worker mainly depends on the employer and labour does not have the power to interfere their wages. They don't have a choice but to accept the employer's wage offer, even if the wage is below the minimum wage rate. This demonstrates that Western assumptions about intensity or efficiency of labour are not applicable in LDCs. So as to solve the issue, Myrdal proposed different mechanisms on the utilization of labour in developing countries. In specific, he suggested a relationship between the length of work, the participation rate and labour efficiency. The length of labour can be measured by dividing total hours worked by members of the man power (Myrdal, 1970).

Hauser also criticized the labour force participation approach. His approach to labour force participation assigned to Myrdal's alternative labour force participation (Sheehan 1975), arguing that the Western concept of labour force participation is not correct for developing countries. He divided the labour force, (who are above ten years old) into three categories. The first category being labour working for wages or profits, the second is labour working inside the house, and the third category is unpaid labour working outside the house. labour working inside the house involves payment in kind, feeding pets, sweeping, subsistence farmers etc.

while labour working outside the house without any payment consists of unpaid servants, sharecroppers, apprentices and others. Hauser categorize the whole population into labour force and non- labour force but his alternative method of classification of labour force participation seems to be very hard to apply in developing countries. It requires the adjustment of census data so as to get the necessary data. However, there are advantages in using Hauser's method as it provides a comprehensive approach when dealing with labour force participation in developing countries.

2.1.1.2 Importance of Female Labour Force Participation

Prior to discussing the importance of female's participation in the labour market and why most countries try to encourage females to be part of the labour supply, two important terminologies should be defined; Female labour Force Participation (FLFP) and Female labour Force Participation Rate (FLFPR). FLFP was defined because the women's decision to be a part of the economically active population: employed or unemployed population as compared to being part of the economically inactive population of the economy – those not working nor seeking work.

The standard measure for FLFP is FLFPR. FLFPR is that the proportion of the working age population that's economically active. It precisely measures the share of a country's female population aged 15-64 that engages actively in the labour market, either by working or looking for work. In measuring FLFPR, the number of females in the labour force is divided by the number of females in the working age population. This rate indicates the dimensions of the female labour supply available to interact with the production of goods and services during a specified period. FLFP is a crucial indicator of women's status and benchmark of female empowerment in society (Kapsos, Silberman and Bourmpoula 2014; ILO).

Women are productive agents who possess equal productivity as men. This means that they have the potential to contribute as much as men do to any economy. That is why several economic gains can be made from the productivity of women through their participation in the labour force, (ILO). According to Mujahid (2014) and Fatima and Sultana (2009) the labour force participation rate plays an essential role in determining economic development and growth. Particularly FLFP is important for the enhancement and socio-economic development of a nation because it promotes efficiency and equity. Generally, high female participation in the labour market implies two things; advancement in the economic and social position and empowerment of women and hence promoting equity and increased utilization of human potential, which can help in building a higher capacity for economic growth and poverty reduction.

2.1.2 Labour force participation in Ethiopia

According to the 2013 labour Force Survey of CSA, of the estimated 80,444,148 population of Ethiopia, 55,629,497 individuals (69.2%) were aged 10 years and above and therefore fall into the potentially economically active part of the population. From this group, 42,403,876 persons or 76% were employed in 2013. The employment to population ratio in the study shows that the proportion of employed males from the economically active male group is 82.7% and higher than that of employed females, which is at 69.8%.

Nonetheless, the disparity by sex is still visible across the data from 2005 to 2013, where male employment has always been significantly higher and the gap has essentially remained unchanged. Male employment declined slightly from 84.7% in 2005 to 82.7% in 2013 while female employment increased very slightly, from 69.0% in 2005 to 69.8 % in 2013.95 Women's unpaid labour that nevertheless contributes to the economy, and women's unrecognized economic

activities, are areas being addressed over the longer term in Ethiopia. Hence, available data on "economically active" and "inactive" status of the population should be scrutinized and interpreted in a way that recognizes the various unpaid activities and roles of women.

Overall, national figures show that agriculture is one of the most important sectors in Ethiopia, which engages the majority of women and men. The level of education is closely linked to occupation and women with secondary or higher education qualifications are more likely to be in sales or services, and in professional, technical, and managerial occupations with women in agriculture tending to have less education. The Demographic Health Survey of 2011 further shows that the proportion of women engaged in sales and services is lower among higher age groups, and increases among those women who were never married, have no living children, live in urban areas, and those in the higher education and wealth quintiles. The smallest portion of the population is engaged in trade in both study periods (2005 and 2013).

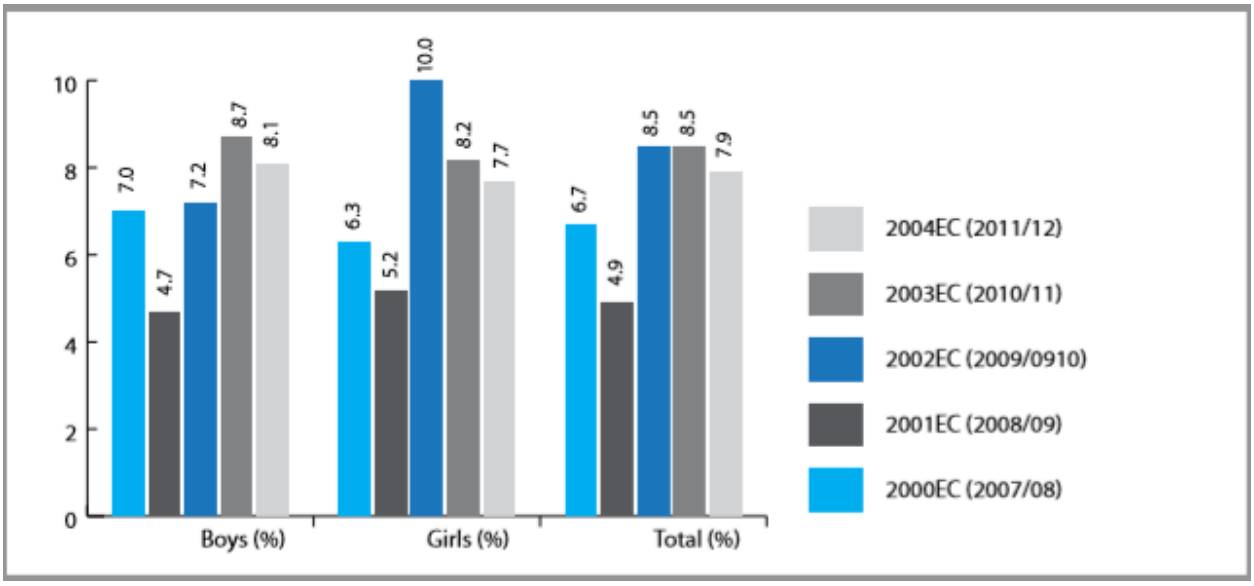
Urban unemployment declined over the years, though the decline is less pronounced especially among youth groups. For example, in the years from 2010/11 to 2011/12 urban unemployment declined from 18% to 17.5%, while urban youth unemployment fell only from 23.7% to 23.3% for the same period. National data for 2013 also shows that more female youth (9.1%) are unemployed as compared to male youth (4.6%). With regards to the number of unemployed youths at the rural and urban areas significant variations were seen at 3.1 % and 21.6% respectively.

Among the urban unemployed youth, the proportion of females is higher at 26.4% as compared to the males at 16.1%. While the study further affirms that the unemployment rate is higher among literate persons (7.0%) than the illiterate (2.9%), it also indicates that in general female unemployment rates are higher than male in both the literate and illiterate categories. In comparing the employment status of women across different marital status and age groups in 2011, it appears that the proportion of women employed rises among women aged 15 to 19 to a peak among women aged 25 to 29, and then declines slightly for the older age groups.

With regards to differences by marital status, the EDHS indicates that women who are divorced, separated, or widowed are most likely to be employed. Overall women's unemployment is mostly attributed to limited opportunities, capacities and skills including negotiation and decision-making

skills, domestic workloads and resulting time poverty and cultural perceptions about the role, capacity and skills of women.

Figure 1: Employment to Population ratio by sex, across three survey periods



Source: CSA (2014), Key findings on the 2013 National labour Force Survey

These engendered employment patterns are used to be reflected by the civil service and government jobs trends. Gender segregated employment landscape is clearly observed by breaking down women's employment by category. Women often occupy lower level jobs, which are usually considered as 'women's work'. In line with these trend women are barely represented in decision-making positions in addition to their lower representation in the formal sector. In 2010/11 68.14% of women occupied clerical and financial jobs with no change in 2012/13, for this category which was still at 68.5%. In 2010/11, only 26.9% of women were engaged in professional or scientific jobs. This figure showed very slight decrement in 2012/13 to 26.3%. Women made up 35 % of the administrative and 47% of custodian and manual jobs in 2012/13, basically unchanged from the preceding two years.

The gender inequality is also obvious in the level of educational qualification. As the statistical information from the Civil Service Ministry of 2010/11, of the total civil servant workforce holding a master's degree, only 10.2% were female, whereas men made up 89.8%. Of the total workforce holding a BA/BSc, 22.2% and 16.7% were women of those holding an LLB. The percentage of

women medial doctors' reached15%. Women who hold PhD qualifications made up 7.7% in 2010/11 and 6.7% in 2012/13 as opposed to 92.3% and 93.2% men holding PhDs in the same years. This clearly illustrates women's representation in civil service posts drops with increasingly higher educational qualification.

In regard to salary scale, women who earn more than 4000 birr per month (b/mo) were only 11% in 2012/13 and 10% on average in the preceding two years, whereas women who earned 400 to 499 b/mo reached 53% in 2012/13 this indicate that women appear mostly on the lower levels of the salary scale. In general, gender inequalities in civil service employment appear in the distribution of jobs and occupational levels, in educational qualifications, and in salaries. There is also relationship between the level of women's educational achievement and their level of employment occupation as well as the corresponding salary scale. As a result, upper and middle level jobs are predominately occupied by men and women's role in decision-making is marginal position.

To address this inequality, the Federal Civil Servants Proclamation 515/2007 calls for preference to be granted to female candidates in the recruitment process, whereas promotion and deployment, given the have equal qualifications to other candidates. The other advantage of the proclamation is, it allows women to maternity leave of 90 days and protects their right to figure free from sexual violence and related gender discrimination. The Directive on the Selection and Recruitment calls for the inclusion of female civil servants in the recruitment committees as a mechanism to make sure women's representation in the recruitment committees and to support for further recruitment of women, among others. It is clear that the Directive has improved the presence of women civil servants by 140% as opposed to men whose representation increased by 60%, from 1990/91-2003, however, women are still underrepresented in managerial positions.

Table 1: Ministry of Civil-Service female and male workers by educational qualifications

Educational level	Male		Female		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Illiterate	602	72.4	230	27.6	832	1.1
Literate	583	48.2	627	51.8	1210	1.7
Grade 1-4	1276	57.7	934	42.3	2210	3
Grade 5-8	6959	62.1	4021	37.9	10616	14.6
Grade 9-12	7591	52.1	6969	47.9	14560	20.1
certificate	817	48.5	866	51.5	1683	2.3
Diploma 10+2	1925	45.1	2340	54.9	4265	5.9
Level 1	14	50	14	50	28	0
Level 2	23	16.3	63	73.3	86	0.1
Level 3	58	38.2	94	61.8	152	0.2
Level 4	146	59.8	98	40.2	244	0.3
College level (year 1-4)	358	58.4	255	41.6	613	0.8
Diploma College / 10+3	6832	50.4	6734	49.6	13566	18.7
BA/B.S.C	10373	77.8	2952	22.2	13325	18.7
LLB	444	83.3	89	16.7	533	0.7
MD	707	84.9	126	15.1	833	1.1
DVM	114	90.5	12	9.5	126	0.2
MA/MSC	4522	89.8	515	10.2	5037	6.9
LLM	116	88.5	15	11.5	131	0.2
PHD	679	92.3	57	7.7	736	1
Unspecified	1269	73.4	460	26.6	1729	2.4
TOTAL	45044	-	27471	-	72515	100
Percentage	62.12	-	37	-		-

2.1.3 Aspiration of married women to work

In early times, moving out of rural areas and small towns/cities to big cities is considered as right step towards economic and social uplift. Some girls engage in the labour force in big cities to handle their social and economic aspirations. But the aspect is that, because the aspirations of those girls are met, they neither complain about their working conditions nor are able to notice the violations against their rights as workers. Young women fresh out from school or college are happy simply being paid, regardless of the amount, and overlook long working hours. They became more independent and few reliant on their parents with their earnings.

However, after marriage, married women with and without children spend on the average longer time out of the labour force than unmarried, childless women (Duncan et. al. 1993). Even a high number of women hands over their economic activity after marriage and that they don't participate

in labour force activity as new entrants. Some general reasons are that women have to migrate from one place to another after marriage; more time is required for child-care and should give time for home duties, in a matrilineal aspect married women have to depend on their husband's approval even to re-enter the labour force and this ultimately depends on the individual and socio-economic characteristics of their husband; and all the advantages that married women had before marriage are left over.

The reasons on the demand side are that the women in the age group before marriage are typically in good physical condition and therefore have better productivity. In terms of annual leave compensations, unmarried woman incurs less cost to the employer than a wife woman since the employer does not need to give maternity benefits or time for feeding infants (see Anker and Nein 1985 for details). On the supply side, married women with children earn but women without children. Nevertheless, married women may continue their economic activity or enter the labour force as new participants if they get good wages, (Ofer and Vinokur, 1983), social security benefits after retirement (McGratten and Rogerson, 2004), the husband features a good attitude towards their work (Huth, 1978), professional education, and good returns to their education. labour force experience also contributes to the continuation of labour since the difference with in the hourly wage rate within an equivalent age group and with the same educational level may reflect the difference in labour force experience (Levine and Moock, 1884).

Some married women work to lower the economic expenses of their households, to give quality education to their children, or to support an outsized family. In addition, others work due to single motherhood (divorcee, separated or widow) or may be as head of the household. The danger of marital status can also play a role in the labour force participation of married women, though Sen (2000) calculated this factor features a smaller role with in the labour supply decision of married women. The socio-economic situation of the household, i.e. if the household may be a household-enterprise, is engaged in agricultural farming, or has contract labour or piece rate work and whishes household labour, the married women of the household participate in work. The labour force participation of married women increases by the providing of child-rearing practices by mothers of working women (Huth, 2004). The work probability may increase by the "Edison Effect", i.e., married women should be thankful to Thoman Edison for household technological innovation – labour -saving appliances which freed them to settle on gainful.

At the macro level, verity of supply and demand side factors affect the selection of the economic activity of married women. Educational, technical and vocational opportunities provided by the overall public sector and availed of by women, employment opportunities, wage rate, availability of credit, state of technology within the country, legislation for female workers and its implementation, and cultural attitudes towards working women are major determinants. On the very top of the socio-economic strata are the ladies who are professionals. They're comprised of highly educated women. They have a minimum of 14 years of education and are employed in high skilled and standing jobs, like doctors, superior civil services, army officers, bankers, lecturers and business executives.

The high number of such women enters the labour force to pursue a career or for his or her personal fulfillment, where financial necessity isn't the most reason for taking up paid employment (Sayeed et. al. 2002). In most of the cases the husbands of these women are high professionals. The Edison effect promotes women working during this category. Next on the dimensions is that the group of girls who are within the formal professional sector. This group is assessed as middle or lower-level professionals and includes nurses, paramedics, telephone and computer operators and clerical workers. Most of them had completed their matriculation or intermediate education and have some technical certificates. Their husbands usually have the same range of education and similar a profession. These two categories fall with within the category of formal employment. Formal and informal employment appears to differ significantly in terms of skill requirements, compatibility with child-care and costs of entry (Glick and Sahn, 2004). The Female workers with in formal sector tend to belong to smaller households having fewer children than people who add within the informal sector (Sayeed et. al. 2002).

At rock bottom of the dimensions are women from poor households who are normally uneducated and add low-income occupations with within the informal sector. This group of girls includes factory workers, informal sector workers like domestic servants, casual workers, vendors, and home-based women workers. The husbands of these women are mostly skilled and unskilled production workers. The deterioration of economic circumstances, just like the death of the husband or the bread-earner, divorce, or separation is that the main causes for his or her working.

2.1.4 Theoretical framework

Neoclassical economic theory was the basis of most labor supply models. Mincer (1962) was the first to present the neoclassical theory of labor supply, and he derived it from traditional utility maximization concepts. This theory implies that an individual maximizes his/her utility through a rational distribution of time between wage employment and leisure (Bowen & Finegan, 1969; Cain, 1966). Accordingly, the wage rate determines the individual supply of labor, subject to constraints of time and leisure (Killingsworth, 1983; standing, 1978). Hence, the labor supply model of females hypothesizes that growth in real wages for women would be expected to increase female labor supply. If wages improve for women or if income opportunities emerge, their labor force participation will be greatly enhanced (Mincer, 1962).

Some authors argue that this theory of women's decisions about labor force participation is unsuitable to non-industrial societies because it ignores women's nonmarket production of goods and services (Steel & Campbell, 1982; TOvo, 1984). Folbre (1986) emphasizes that householdrelated production (e.g., production for use, production for exchange, and childrearing) is at the core of economic theory.

Mincer (1962), Becker (1965), and Cain (1966) recognize the problem of ignoring' women's non-market production. As a result, Becker (1965) introduced a theory on the allocation of time in which the concept of non-market work was incorporated into the theory of labor supply. His model includes home production as well as market work and leisure. Nevertheless, in almost all discussions of Becker's time allocation model, the reference to leisure time is replaced by the term "non-market" work, which includes both leisure time and non-market production (Becker, 1965).

Women's representation within the market has progressively increased over the years. The female employment to population ratio shows an increasing trend from 37.5 in 2009 to 42. 6 in 2012. Both in female employment in formal and informal sectors of the economy reached 69% of the female labour force. Female civil servants comprised 41% of the government official's employment. According to this data within the formal sector shows that 64.2% constitute female employees. Within the informal sector, women constitute 51%. Although the proportion of women within the formal sector is high, the positions held by women are low level positions: women hold 71% of the

clerical and monetary jobs and 51% of the custodial and manual jobs while their share in administrative/ professional and scientific job categories was lesser.

Legal and policy framework

The country has put appropriate legal frameworks, including adopting international conventions, guaranteeing equal pay for equal participation of work addition to prohibition of discrimination on the thought of sex within the labour market. Domestic legislation regulating civil servants in addition to the labour law – covering both the social and private sectors – have provisions protecting women from discrimination on the thought of their reproductive roles. Favorable conditions in terms of paid maternity leave, paid time-off for checkup and upon doctor's recommendation are all provided for (Federal Civil Servants Proclamation No.515/2007 and labour Proclamation No. 377/2003). Safe working conditions and protective environment including against harassment also are also provided for through these legislative frameworks. The proper way to form unions is protected under the law. The country has also adopted an MSE strategy and adopted the convention on domestic work.

Recognizing that women's disadvantage within the economic arena emanates from women's limited access to economic resources among others, various legislative measures are put in place to make sure women's equal access to economic resources and benefits like land, property and credit/finance. These include: the Agricultural Land Administration and Use Proclamation (2005) gives equal rights to land, the Revised Family law (2000) accords women equal rights to property in marriage and through divorce, equal rights in inheritance guaranteed by the Constitution, equal rights in employment, pay and transfer of pension entitlements guaranteed by the Constitution and subsidiary legislation. The Constitution further provides for affirmative measures within both the public and private sectors.

Further, public investment programs are aligned with women's priorities. Allocations for economic infrastructures like water and sanitation as well as roads have shown significant rates of growth: 52.4% and 82.4% between 2010 and 2012 respectively. These sorts of investments contribute to lessen the burden of women in the reproductive sector thereby allowing them to efficiently participate in the productive sector. As a result of these investments, between 2010 and 2013, over

8 million women have the access to clean water with women constituting 35% of the community water management committee across the country. Similarly, 5,000,000 better fuel energy efficient stoves were distributed all over the country. Women in rural areas have shifted to the use of biogas. Training on improved fuel saving technology was given and provided to women.

Measures towards ensuring women's equitable access to resources

The effort to improve women out of poverty has seen high levels of participation of women in small and micro enterprises with in the country. They are mainly engaged in services, trade and production of handicrafts. One among the sources of credit for women engaged in small business is micro finance institution (MFI). The data shows that of the 28 registered micro-finance institutions in the country 46.8% of the clients are women (COMESA 2013). During the GTP implementation period (2010/11-2014/15) about 5 million women were prepared and started to function in the small and medium enterprises sector and accessed credit. The number of girls that benefited from saving their income and credit services was 610,789 in 2009, 1,457,339 in 2010, 4,098,313 in 2012 and 6.9 million in 2013.

Various measures are being organized and start to function towards supporting women engaged in micro-and small enterprises such as providing business management training, awarding prizes at national and regional levels to best achievers to motivate these women's, organizing markets and creating networking forum. In response to these measures, women owned and operated microenterprises graduated into medium enterprises.

Women have also received training on management and business livelihood trainings; women and youth small and medium scale enterprise leaders received technical trainings; women and youth entrepreneurs graduated from micro enterprise to small and medium scale business. Working with an association called women entrepreneurs called the Ethiopian Chapter of Women Entrepreneurs was established in 2013.

In order to get increasing levels of correlation of women within the labour market, the country has recently applied ILO Convention no. 156 that requires governments to take measures to take in to account and ease the burden of women with family responsibility. The government is taking steps to formulate the provisions of the convention and reports periodically on the improvements.

To be able to promote the increased participation of women as active agents and beneficiaries of development interventions, MoWCYA has been formulating various programs with bilateral and multilateral partners mainly the European Union and United Nation Joint Gender Program. A national program on micro and small enterprises aiming economically empowering women is also under way by the support of World Bank. Even though women's participation in the labour sector is increasing over time, there is still big number of women informal and civil service clerical jobs.

2.2 Empirical Literature Review

Based on the theoretical analyses discussed above, several empirical studies have been conducted in many countries. To mention few of them, Aromolaran (2004) examined the influence of education both own and husbands on labor force participation of married women in Nigeria in wage market employment, self-employment and overall labor market participation. The study confirms not only the influence of own education (both bundled and unbundled) on labor force participation, but also that the husband's education positively influences the labor force participation of married women in Nigeria. The methodology of study relies on the use of linear probability regression model towards the estimation of three labor supply functions on female labor force participation. The results show that own as well as husband's education at all levels positively influence labor participation in different degrees in total employment in Nigeria.

Anbreen Bibi and Asma Afzal, **(**2012) found that education of the respondent, number of off springs, number of dependents, family size, income of husband, monthly expenditures of the family, positive attitude of husband and family towards the job of women, job satisfaction, have a positive impact on the labor force participation of married women. While age of the respondent, living with husband, strong relationship with spouse before marriage, satisfaction of house wives with their current life, restrictions from family regarding job, other earners in the family negatively affect the decision of married women to participate in the labor force. Rate of inflation prevailing in the economy of a country largely effect the labor force participation of married women.

Burak Darici and Mehmet Tasci, (2010) also found for both married and non-married females, that high school and higher than high school graduates are more likely to participate in labour

force than non-graduates, there is an inverse U-shaped relationship between age and labour force participation.

In Ghana, Sackey (2005) conducted a study on the effect of formal education on female labour force participation using data from the Ghana Living Standard Survey. The study's underlying assumption was that the two concepts – labor force participation and fertility decisions – are strongly linked and as such they should be studied together. To do this, a multinomial probit and was specified and estimated. The study found a negative and statistically significant relationship between fertility, while education and reduced family size increase labor force participation rate among women in Ghana.

Landman et al (2016) find that the effect of co-residence on female labor supply in Kyrgyzstan is negative and insignificant. The authors exploit a tradition in Central Asia where the youngest son of a family usually lives with his parents, and instrument co-residence with being married to a youngest son. The authors find that women who co-reside in Kyrgyzstan have more children, spend similar time on housekeeping tasks and child care, and invest more time in elder care compared with women who do not co-reside. These mechanisms appear to be inherently different from those in less patrilocal settings where co-residing parents relieve the women from household chores.

As Klasen (2019) states, this relationship often takes the form of a U-shaped function, with higher participation at lower levels of educational attainment and at very high levels of education. The recent expansion of schooling around the developing world has thus shifted women's educational attainment to intermediate levels, associated with lower levels of labor force participation (minimum of the U-shaped function).

Kamitewoko and Xiang-rong (2005) focused on the factors that affect the labour force participation of married females who live in urban areas of Chine and Congo. They found that educational level, age and the number of adults in the household have statistically significant effect on labour force participation of married females in both countries.

Kyzylyrmak (2005) examined labour force participation for married female in turkey using 2003 Household Budget Survey data, using multinomial and mixed logit models. The results shows that

female decision to participate in labour force in order to support the income and mainly to compensate their husbands' income losses. Therefore, she concluded the female whose husbands are unemployed, prefer permanent income jobs and with a decrease in fertility and increase in educational level, permanent job opportunities for female also increases.

Lim Fui Yee Beatrice, (2017) uses Logit model and concluded that to increase married female labour force participation in Malaysia investment in education should continue to be the country's priority.

2.3 Female labour force participation in developing countries

Over the last twenty‐five years an increasing number of women have joined the labour market, allowing for the partial closing of the gender participation gap. Globally, the female labour force participation rate increased from 50.2 to 51.8% between 1980 and 2009, whereas the male counterpart decreased from 82.0 to 77.7%. As a result, gender differentials in labour force participation rates fell from 32 to 26 percentage points. (Minh Quang Dao)

Female labour force participation rates have also converged across countries because of the rapid rises in participation in countries that began with very low rates (mostly in Latin America and therefore the Caribbean and in the Middle East and North Africa) coupled with small decreases in countries that began with very high rates (mostly in Eastern Europe and Central Asia). More than half women are now economically active in Sub‐Saharan Africa, East Asia and the Pacific, Europe and Central Asia, and Latin America and therefore the Caribbean, whereas participation rates exceed 60% in South Asia and the Middle East and North Africa. (Minh Quang Dao)

Changes in female participation rates over the past quarter century are often explained by the combined effect of economic development and falling fertility. On a worldwide scale, growing economic opportunities for women, especially in manufacturing and services, have accompanied economic development. Consequently, there are more robust market incentives for women's labour force participation in the form of an increase in the demand for female labour and, occasionally, higher absolute and relative wages. Besides, economic development has made it possible to improve infrastructure including electricity and water, which can reduce time

constraints and alleviate transaction costs associated with market work, especially for women. (Minh Quang Dao)

While women's labour force participation tends to increase with economic development, the connection isn't straightforward or consistent at the country level. There is considerably more variation across developing countries in labour force participation by women than by men. This variation is driven by a good sort of economic and social factors, which include economic development, education, and social norms. Looking more broadly at improving women's access to quality employment, a critical policy area is enhancing women's educational attainment beyond secondary schooling. (Sher Verick)

2.4 Conceptual Framework

The supply of labor is determined by the demographic and socio-economic factors of the participants. Age and education are among the major factors that shape the structure of the labor force. Household income determines the need of the labor force participant for income. other demographic factors also have an important influence. These are primarily bound by the life cycle of the woman, as it relates to her fertility behavior, and to the family size which determines the need for the woman's income. other factors, especially those that affect women in developing nations at large, and those that are of particular significance to Middle Eastern women, are important determinants.

These relate to opportunities that are considered conducive for women to seek employment, such as the availability of a substitute resource person for child care in the -case of the married woman with children. Culture may also be of particular significance. Social attitudes and sanctions observed between kin that, for example, advocate family reproduction over economic advantage, may constitute additional barriers to women seeking employment. Cultural settings that restrict women's mobility and choice of occupation are equally important in determining the outcome of women's labor force participation. The demand for labor is determined by various factors, such as the national and regional unemployment rates, wage rates, and employers' preference. It has been documented around the world that female wage rates are lower than those of men for similar occupations (Berger, 1985; Grown & Sebstad, 1989; stone, 1983; Liedholm & Mead, 1987).

In the Middle East, employers' preference for male over female employment has been substantiated (Abu Nasr, 1985; Hijab, 1988). This preference has been justified on the basis of women's interrupted work episodes due to childbearing and childrearing. Discrimination against women has also been based on the erroneous assumption that women do not need to work as much as men (Bose & Rossi, 1983).

However, it has been demonstrated that women want to work more than they are able (Bruce & Dwyer, 1988; Folbre, 1986; Hijab, 1988; Youssef, 1982). Their ability to work is constrained by various factors and conditions such as childbearing, the primary responsibility of child care, lower education levels, lower mobility and access to employment opportunities. The discrimination theory, out of the field of sociology, postulates that the removal of discrimination against women and the achievement of equal rights with respect to employment opportunities has strong positive effects on the rates of female economic activities (Bose & Rossi, 1983).

Sexual norms which define the place of women and men inside and outside the household and the forces of discrimination in the labor market shape the outcome of female economic roles (United Nations, 1985)

CHAPTER 3

Methodology

This chapter presents the research methodology employed in the study. It describes the study coverage, Concepts and Definitions, technique, sample size, sampling frame and sample design of the survey. In addition, it indicates the data collection, sources, and the econometric model employed in the research. **Secondary data exclusively collected from Central Statistical Agency** (CSA), 2015/16 Welfare Monitoring Survey using Probability Proportional to Size technique is applied.

3.1 Coverage

The year 2015/16 Welfare Monitoring Survey covered all rural and urban parts of the country. The 2015/16 survey, unlike the previous WM surveys fully covered both the sedentary as well as the pastoralist areas of Somali and Afar regions. Within the rural part of the country, it had been planned to cover 864 enumeration areas (EAs) and 10,368 households (12 households per EA). However, for the urban areas, it was planned to cover 1,242 enumeration areas (EAs) and 19,872 households (16 households per EA).

The response rate of the 2015/16 WMS was very high than ever. All the non-urban sampled EAs and households were fully covered by the survey. Also, in urban areas all EAs were fully covered by the survey. However, with respect to households, out of the 19,872 sample households, only 3 households were not covered by the survey, which provides a complete response rate of 99.99%. At the end, it was possible to get complete and cleaned raw data set from 30,237 households, which is quite high compared to the 2010/11 WMS.

3.2 Concepts and Definitions

HOUSEHOLD SURVEY: Household survey is a method of data collection using interviewer/enumerators with designated households as to get and record responses (with application of practical measurement if necessary) to a selected list of questions and/or area of interest. A survey differs from a census in that only a sample of households is covered.

URBAN CENTER: in theory is defined as an area with 2000 or more inhabitants. During this survey, however, for practical purposes city center includes the next regardless of the number of inhabitants.

i) All administrative capitals (Regional capitals, Zone and Wereda capitals),

ii) Residential areas with Urban Dweller's kebeles (UDKs) not counted in in (i),

iii) All localities which are not included either in (i) or (ii) above having a population of 1000 or more persons, and whose inhabitants are primarily engaged in nonagricultural activities.

URBAN KEBELE, (UK): is that the lowest administrative body in an urban center with its own jurisdiction. It is a locality (commonly referred to as Kebele) formed by the inhabitants, and typically constitutes a part of the urban center.

RURAL KEBELE (RK): is that the lowest administrative unit during a settled country with its own jurisdiction. It is an association of rural dwellers formed by the inhabitants of a given area whose members are engaged either in agricultural and/or non-agricultural activities.

ENUMERATION AREA (EA): is a unit of land delineated for the aim of enumeration housing units and population without omission and duplication. An EA usually consists of 150 to 200 households in rural areas and 150 to 200 housing units in urban areas. An enumeration area should be associated with UK or a RK in one of the subsequent ways.

• An EA may be equal to a RK if the amount of the households within the RK is less than or equal to 150 – 200 in rural areas; and is equal to a UK in urban areas if the number of housing units within the UK is 150 – 200.

• An EA may be a part of a RK or a UK and its delineation cannot extend outside the boundary of the corresponding RK or a UK.

COLLECTIVE QUARTER: A collective quarter is a premise (a housing unit, a building or a compound) during which a number of unrelated persons reside together, and share common facilities.

Examples of collective quarters are monasteries, prisons, boarding schools, home for aged, children's homes, work camps, military barracks, etc. It is vital to consider that in the premises of some collective quarters, there could also be private households.

HOUSEHOLD: Constitutes of an individual or group of persons, regardless of weather related or not who normally live together within the same housing unit or group of housing units and who have common cooking arrangements.

HEAD OF HOUSEHOLD: A head of a household is a person who economically supports or manages the household and also considered as head by members of the household or declares himself as head of a household. Head of a household can be either male or female.

MEMBER OF HOUSEHOLD:

Person constituting a household is called member of the household. The subsequent are considered as members of a household:

i) All persons who lived and ate with the household for a minimum of six months including people who weren't within the household at the time of the survey and were expected to be absent from the household for fewer than six months.

ii) All guests and visitors who ate and stayed with the household for six months and more.

iii) House maids, guards, baby-sitters, etc. who lived and ate with the household even for fewer than six months.

HOUSEHOLD SIZE: is that the entire total number of members of a household.

3.3 Sampling Frame

The list of all households obtained from the 2007 Population and Housing Census was used as a frame to pick the sample EAs within the rural and urban areas of the country. The frame from which sample households were selected was supported a fresh list of households taken at the start of the survey period in each of the chosen EAs.

3.4 Sample Design

For the aim of representative sample selection, the country was divided into four broad categories including rural category, major urban centers category, and medium and small size town's category.

Category I - Rural: - The rural areas of eight regions as well as the rural part of both Harari region and Dire Dawa City Administration are included in this category. The rural part of each

region was considered to be a survey domain (i.e., reporting level) that the main findings of the survey are reported. Accordingly, a complete of 10 survey domains was formed under this category. There was no domain during this category for Addis Ababa City Administration because the region doesn't have the rural or agricultural part. A stratified two stage cluster sample design was adopted to select EAs and HHs, where enumeration areas are the primary sampling units (PSUs) and the secondary sampling units (SSUs) are households.

Category II - Major urban centers: - during this category all regional capitals (10 cities), eleven other major urban centers that have relatively larger population size as well as 10 sub cities of Addis Ababa (totally 31 urban centers) were included. The survey was designed to supply or give an estimate for each and every urban center included under this category. During this category too, a stratified two stage cluster sample design was adopted to pick sample EAs and HHs, where enumeration areas are the primary sampling units (PSUs) and the therefore secondary sampling units (SSUs) are households.

Category III & IV - Other urban centers: - Urban centers within the country, aside from those under category II, were grouped under category III & IV. A domain of other urban centers was formed for eight regions. There is no domain in category III & IV for Harari, Addis Ababa and Dire Dawa Administration as they do not have urban centers other than those grouped under category II. Unlike the above two categories, a stratified three stage cluster sample design was adopted to pick Sample Towns, EAs & HHs. In this case the first sampling units were towns, whereas, enumeration areas and households were the secondary & the third stage sampling units respectively.

3.5 Sample Size and Selection Scheme

Category I: - a complete of 864 EAs and 10368 households were selected from this category. Sample EAs of each reporting level were selected using Probability Proportional to Size (PPS) techniques; size being number of households obtained from the 2007 Population and Housing Census. Twelve households per EA were systematically selected from a fresh list of households prepared at the start of the survey.

Category II: - during this category 744 EAs and 11,904 households were selected. Sample EAs from each reporting level within this category were also selected using PPS techniques; size

being number of households (Census 2007). Sixteen households in each of the selected EAs were systematically chosen from a fresh list of households prepared at the start of the survey.

Category III & IV: - 107 urban centers, 498 EAs and 7,968 households were selected in these two categories. Urban centers from each domain as well as EAs in each city were selected systematically using the PPS techniques; size being number of households (Census 2007). Sixteen households in each of the selected EAs were systematically selected from a fresh list of households prepared at the start of the survey.

Table2: Domain Allocation of 2015/16 WMS Sample EAs & HHS.

Region	Sample EAs & HHs									
	Major urban		Other urban		Urban total		Rural		Urban+Rural	
	EA	HH	EA	HH	EA	HH	EA	HH	EA	HH
Country Total	744	11,904	498	7,968	1242	19,872	864	10,368	2,106	30,240
Tigray Region	24	384	48	768	72	1,152	96	1,152	168	2,304
Affar Region	24	384	24	384	48	768	48	576	96	1,344
Amhara Region	96	1,536	114	1,824	210	3,360	168	2,016	378	5,376
Oromia Region	120	1,920	138	2,208	258	4,128	192	2,304	450	6,432
Somali Region	24	384	48	768	72	1,152	48	576	120	1,728
Benishangul Gumuz	24	384	24	384	48	768	48	576	96	1,344
SNNP Region	120	1,920	78	1,248	198	3,168	168	2,016	366	5,184
Gambella Region	24	384	24	384	48	768	48	576	96	1,344
Harari Region	24	384			24	384	24	288	48	672
Addis Ababa	240	3,840			240	3,840			240	3,840
Dire Dawa	24	384			24	384	24	288	48	672

In total, including region rural, region urban and country domains, 71 reporting levels were formed under this design in total.

3.6 Data Analysis

In this study, both descriptive statistics and econometric model is used for the analysis of data collected. Descriptive statistics were used to describe relevant aspects of variables and to come up with detailed information of labour force participation of married females. First, to look at to what extent demographic and social factors are associated with married female labour force participation, we employed pobit models being controlled by relevant covariant variables that

range from married women's age to income and education of husband. To further substantiate the effect of demographic and social factors on female labour force participation, we extend the probit model into multinomial probit model.

The latest STATA version statistical software will be used to run the regression and therefore the resulting output will be interpreted. The collected data is presented in tables and diagrams using different statistical techniques in chapter four.

3.7 Model Specification

The first step is based on the use of a **probit model**. As previously mentioned, these models enable us to analyze to what extent demographic and social factors are associated with married female labour force participation, under a ceteris paribus assumption. Consequently, the specification of our model to be tested can be expressed by Equation:

$$[MWLFP] = \beta_0 + \beta 1\,[MWAGE] + \beta 2\,[MWLIT] + \beta 3\,[MHEAD] + \beta 4\,[MWDIF] + \beta 5\,[HHSIZ] + \beta 6\,[CHILD] + \beta 7\,[HLIT] + \beta 8\,[HEMP] + \varepsilon i$$

For the choice or decision of these women to participate in the labour force, we estimated a regression model during which the decision of married women labour force participation (MLFP) was a function of several explanatory variables. The dependent variable could take on only two binary values: 1 if the married woman participated in the labour force and 0 if she did not. The term error is understood to be iid~N (0; σε). Generally, binary outcome models, as is the case of probit models, are constructed upon a dependent variable, yi , that admits only two possible values (1 or 0) and each value has an associated probability (p if yi = 1 and 1 − p if yi = 0). In this case, variable yi takes the value 1 if the probability of that alternative exceeds the probability related with option 0, the other way around.

As the estimated β parameters are not directly interpretable (apart from the sign), marginal effects of the regressors at the mean are estimated. As these alternative parameters are fully interpretable in sign and value, they show what proportion the (conditional) probability of the result variable changes when one changes the value of a selected regressors under a ceteris paribus assumption (holding all other regressors constant at some values). β parameters and marginal effects are shown and discussed.

Finally, a second step analysis is administered upon **multinomial Probit regression (MNP).** The MNP is obtained from the (additive random-utility model) ARUM by assuming normally distributed errors.

Where the errors are assumed to be normally distributed, with c: $\varepsilon \sim N(O, \sum)$ where $\varepsilon = (\varepsilon i1, \ldots, \varepsilon im)$.

Then from the probability that alternative j is chosen equals

$Pij = Pr(yi = j) = Pr\{ \varepsilon ik - \varepsilon ij \leq (xij - Xik)'\beta + zi'(\Upsilon j - \Upsilon k)\}$, for all k

This is an (m - I)-dimensional integral for which that there is no closed-form solution and computation is difficult. This problem didn't arise for the preceding logit models because for those models the distribution of ε is such features a closed-form solution. When there are few alternatives, say three or four quadrature methods are often wont to numerically compute the integral. Otherwise, maximum simulated chances are used.

Regardless of the method used, not all (m + 1) m/2 distinct entries within the error variance matrix ∑, are identified. The model is defined for m - 1 error differences (εik- εij) with an (m - 1) x (m - 1) variance matrix that has m (m - 1)/2 unique terms. Because a variance term also must to be normalized, there are only {m (m - 1) /2} - 1 unique terms in ∑. In practice, further restrictions are often placed on ∑, because otherwise ∑ is imprecisely estimated, which may cause imprecise estimation of (β and ϒ).

3.8 Variable specification

The determinates of MFLP demographic and socioeconomic condition of a household durin g this study are married women's age, literacy status, decision power, Difficulties, family size, number of children, employment status of husband and literacy status of husband. These variables have direct and indirect influence on the labour force participation rate of married women.

Table 3: Definitions of Dependent and Explanatory Variables Used in the Model

Variables	**Definitions**
Dependent Variable	
MWLFP (Married woman's labour force participation)	□ 1 If she works, 0 otherwise
Independent Variables	
MWAGE (Married woman' age)	□ Her age in completed years
MWLIT (Married woman's literacy status)	□ 1 If she is literate, 0 otherwise
MHEAD (Married woman as head of household)	□ 1 If she is head of household, 0 otherwise
MWDIF (Married woman with difficulties)	□1 If she has any difficulties, 0 otherwise
HHSIZ (Household/family size)	□ Number of household/family members
CHILD (Number of children)	□ Number of children
HLIT (Husband's literacy status)	□ 1 If the husband is literate, 0 otherwise
HEMP (Husband's employment)	□ 1 If husband is employed, 0 otherwise

CHAPTER 4

The study adopted both descriptive and empirical estimations to explore labour force participation of married women.

4.1 Descriptive Analysis

This is the socio-demographic and economic characteristics of Married female labour force participation; such as age, marital status, education status etc. we have a total population observation of 20,786 of married women in the study of which 11,714 are married women labour participants while 9,072 are not labour force participants.

The age composition of Married womans' which is a continuous variable, as illustrated in the table below, 22% of the married woman are in the age between 15-24 years, while 50.8%, 22.9% and 4.3% of the married woman in the survey are between the age of 25-39 years, 40-59 years and 60-97 years old, respectively. The age ranges of married woman, in the survey taken are between 15 to 97 years of age. This implies that the largest population of the survey are middle-aged, which is a good working age. Age is expected to have a negative relation, to the married woman participation of the data collected in the survey. As age increases, the ability of married woman participation will tend to decrease, therefore we expect a negative relation.

Married woman's literacy status which is a categorical variable as shown in the table below, out of the total population (20,765 participants) of the married labour force participants, 58.21% (12.088 individuals) have attended any kind of formal education and 41.79% (8,677 individuals) have never attended any kind of formal education. Therefore, as married women attend any kind of formal education it is expected to affect the labour force participation positively.

Married woman as head of the household which is a categorical variable is not common practice, especially, in less developed country. Among the total population of the married labour force participants 13.73% (2,854 individuals) are head of the household while 86.27% (17,932 individuals) are not head of the household. We can clearly; see that due to different burdens or other reason, which is not enabling women's to be head of the household. Thus, it is expected to have a negative relationship with their labour force participation.

As any human beings, married women might also possess different types of difficulties, such as hearing impairments, visual or any kind of disabilities. Out of the total married woman labour force participants 1.51% (314 individuals) are with difficulties while the remaining or 98.49% (20,472 individuals) are without any kind of difficulties. As the attention given to person's with difficulties which is a categorical variable is very low especially in least developed countries like Ethiopia, it is expected to have a negative relationship with married women labour force participation.

The household or the number of family size which is a continuous variable is expected to affect the married women labour force participation directly. As the number of family size increases, the tendency of married women labour force participation tends to increase because they will be pushed to engage in work, as they have to sustain the lives of their families, they support under their roof. 46.11% (9,585 individuals) of the married women labour force participants have 1-4 families that are living under them, 46.69% (9,705 individuals) have 5-8 families that are living under them, 6.67% (1,387 individuals) have 9-12 families that are living under them, 0.41% (82 individuals) support 13-17 families that are living under them, while 0.12% (27 individuals) support 17-27 families that are living under them.

As the number of children in the household increases married women are more inclined to join the labour force to sustain their lives. 55.76% (11,591 individuals) of the married women labour force participation have 0-2 children, 35.02% (7,279 individuals) have 3-5 children, 8.58% (1,783 individuals) have 6-8 children, 0.63% (131indivduals) and 0.01% (2 individuals) have respectively 9-12 and 13-16 children. Therefore, as the number of children (continuous variable) in the household increases it is expected to affect the married women's labour force participation positively.

Husband's literacy status which is a categorical variable as shown in the table below, from the total dataset (18,413) of husbands 68.34% (12,583 individuals) have attended any kind of formal education and 31.66% (5,830 individuals) have never attended any kind of formal education. It is expected to have a positive relation towards empowering their wives to work.

Husbands' employment type is categorized in employer, self-employed, employed unpaid family work/free service and others which respectively contribute to the married women labour force

participation.0.97% (166 individuals), 67% (11,352 individuals), 30.5% (5,168individuals), 1.48% (252 individuals) and 0.05% (5 individuals). We expect this to have a negative relation with the married women labour force participation, the fact that the husband is providing will make them reluctant and dependent on the husband's income.

Table 4: Number of Observation of Dependent and Explanatory Variables Used in the Model

Background Variables	**Number**	**%**
MWAGE (Married woman's age)		
15-24	4,569	22
25-39	10,578	50.8
40-59	4,752	22.9
60-97	887	4.3
Total	20,786	100
MWLIT (Married woman's literacy status)		
Ever attend any formal education	12,088	58.21
Never attend formal education	8,677	41.79
Total	20,765	100
MWHEAD (Married woman as head of household)		
Head of the Household	2,854	13.73
Not head of Household	17,932	86.27
Total	20,786	100
MWDIF (Married woman with difficulties)		
With any difficulties	314	1.51
Without any Difficulties	20,472	98.49
Total	20,786	100
HHSIZ (Household/family size)		
1-4	9,585	46.11
5-8	9,705	46.69
9-12	1,387	6.67
13-17	82	0.41
17-27	27	0.12
Total	20,786	100
CHILD (Number of Children in the Household)		
0-2	11,591	55.76
3-5	7,279	35.02
6-8	1,783	8.58
9-12	131	0.63
13-16	2	0.01

Total	20,786	100
HLIT (Husband's literacy status) Ever attend any formal education Never attend formal education	 12,583 5,830	 68.34 31.66
Total	18,413	100
HEMP (Husband's employment) Employer Self employed Employed Unpaid Family work/ Free service Others	 166 11,352 5,168 252 5	 0.97 67 30.5 1.48 0.05
Total	16,943	100

As it can be seen from the table below the dependent variables for probit model which is married women labour force participation and for multinomial probit model which is the sector married women participated on is used in the analysis showing from the total 20,786 married women observation 56.36% of them participate in the labour force which 43.31%, 7.32 and 49.37 of the total married women labour force participants engage in agriculture employment, Industry Employment and service Employment respectively.

lfpw	Freq.	Percent	Cum.
0	9,072	43.64	43.64
1	11,714	56.36	100.00
Total	20,786	100.00	

sector	Freq.	Percent	Cum.
agriculture employment	5,142	43.31	43.31
Industry Employment	869	7.32	50.63
service Employment	5,861	49.37	100.00
Total	11,872	100.00	

4.2 Econometric Analysis

In this section, the study presents the results of econometric analysis. As described in the methodology part, to examine factors that determine the labour force participation of married women, observed probit model and multinomial probit model were used in this study. The results of the Pearson Chi2, probit regression and the marginal effects of the outcome are presented separately in the table below. We will be looking at the marginal effects of the all-multinomial probit outcomes in another table. As mentioned in the methodology section 20,786 observers were used in the regression.

Large value of the Pearson chi-square or likelihood ratio chi-square for a given predictor variable can be used as an indication for the existence of strong association between the given predictor variable and the response, keeping the effect of other factors constant. The decision was based on the Pearson chi-square value, p-value and the 1%-10% level of significance.

Table 5: Pearson chi-square

Variables	**Pearson chi- square**	**P- value**
MWAGE	707.7941	0.000
MWLIT	137.3311	0.004
MWHEAD	8.7087	0.013
MWDIF	32.8080	0.000
HHSIZ	107.6651	0.824
CHILD	106.4353	0.236
HLIT	151.8223	0.000
HEMP	583.3754	0.005

The above table shows: Married women's Age, Literacy Status, Married Women as Head of the Household, Difficulty Status, Husband's Literacy status and Husbands Employment were found to be strongly associated with MWLFP at 5% level of significance. House hold size and Number of children shows relatively weak association with MWLFP at 5% level of significance. Accordingly, each of the variables found to be associated with MWLFP in the country were taken as a candidate predictor variable in Probit Model.

Table 6: Results of the probit regression and the Marginal effects

Variables	Coefficient of Probit	Marginal effects
MWAGE	**0.005**** **(0. 001)**	**0.002**** **(0.001)**
MWLIT	**0.09**** **(0.024)**	**0.035**** **(0.009)**
MWHEAD	**-0.133**** **(0.039)**	**-0.052**** **(0.015)**
MWDIF	**0.395**** **(0.085)**	**0.154**** **(0.033)**
HHSIZ	**-0.008**** **(0. 010)**	**-0.003**** **(0.003)**
CHILD	**0.019**** **(0.011)**	**0.007**** **(0.004)**
HLIT	**0.203**** **(0.024)**	**0.08**** **(0.009)**
HEMP	**-0.002**** **(0.001)**	**-.001**** **(0.001)**

Probit model for MFLFP, goodness-of-fit test

number of observations = 16,882

number of covariate patterns = 6,990

Pearson chi2(11785) = 7,693.35

Prob > chi2 = 0.0000

A negative sign in column labeled indicates an inverse relationship of explanatory variable with the dependent variable. In contrast a positive coefficient column labeled indicates a positive relationship with the dependent variable.

As Indicated in the above Table, the age of married women observers has a positive significant effect on the labour force participation at 1% level of significance. When the age of married women increases by one year; the probability of joining the labour force will increase by 0.2%. It can be concluded that the older the observers age is the better than younger age observers in joining the labour force.

The literacy rate of married women has a positive effect on her labour force participation. A married woman who has ever attend formal education has a 3.5% more chance of joining the labour force than who has never attend formal education and it is significant at 5% level of significance.

Married women as a head of household has a negative relationship to her labour force participation. If a married woman is the head of the household, she has 5.2% less chance of joining the labour force. This suggests that as she focuses more on in-house roles and taking different burdens other than joining the labour force.

Difficulty status of married women shows a very surprising result as it shows married women with any difficulties has 15.4% more chance of joining the labour force than married women without any difficulties. From this, we can conclude there is a very high attention given to females with difficulties in their labour force participation thus could be through the effective implementation of affirmative actions or other reasons.

Even though Both household size and number of kids have insignificant impact on married female labour force participation at 10% level of significance, number of kids has a positive relationship with married female labour force participation as it increases by one-unit MFLFP will increase by 0.7%. From this we can see how both parents share household burden as the number of children increases in a family.

Husband's Literacy status has a positive relationship with married female labour force participation. If married female has a literate husband, she has 8 % higher chance of joining the labour force than that of married females without literate husband.

The employment status of husband has a negative relationship with married female labour force participation as it decreases MFLFP by 0.1% when it increases by 1 unit.

4.2.1 Does regional difference have an impact on married women labour force participation?

To answer the above question additional regression has implemented on this study which includes a categorical regional variable. This variable includes all regions in Ethiopia. Thus, According to the result participating in Afar region versus participating in Tigray region (the reference group) decreases the Z-score by 24.2% and it is statistically significant. All regions: Amhara, Oromia, Somalia, SNNP, Gambella, Harari, Addis Ababa versus Tigray region decreases the Z-score by 17.8%, 25.7%, 110.7%, 16.2%, 23.7%, 35.8% and 65.6% respectively having a statistically significant effect at 5% level of significance. On the other hand, Benshangul and Dire Dawa regions versus Tigray region increases the Z-score by 0.5% and 3.99% respectively but both regions are not statistically significant.

Table 7: Result of probit regression including Regional Variable

Variables	**Coefficient of Probit**	**P-Value**
MWAGE	**0.004** **(0. 001)**	**0.000**
MWLIT	**0.10** **(0.025)**	**0.000**
MWHEAD	**0.175** **(0.042)**	**0.000**
MWDIF	**0.457** **(0.086)**	**0.000**
HHSIZ	**-0.001** **(0. 010)**	**0.863**
CHILD	**0.023** **(0.011)**	**0.038**
HLIT	**0.198** **(0.025)**	**0.000**
HEMP	**-0.001** **(0.001)**	**0.171**

REGION		
Afara	**-0.242****	**0.000**
	(0.061)	
Amhara	**-0.178****	**0.000**
	(0.045)	
Oromya	**-0.259****	**0.000**
	(0.043)	
Somalia	**-1.107****	**0.000**
	(0.057)	
Benshangul	**0.005****	**0.927**
	(0.060)	
SNNP	**-0.162****	**0.000**
	(0.044)	
Gambella	**-0.237****	**0.000**
	(0.060)	
Harrari	**-0.358****	**0.000**
	(0.072)	
Addis Ababa	**-0.656****	**0.000**
	(0.050)	
Dire Dawa	**0.039****	**0.600**
	(0.075)	

Probit model for Mflfp, goodness-of-fit test

number of observations = 16882

number of covariate patterns = 11795

Pearson chi2(11776) = 12180.47

Prob > chi2 = 0.004

4.2.2 How does married women labour force participation associates with sectors they participated?

Table 8: Results of Multinomial Probit Model Regression

Variables	Industry Employment	Service Employment
MWAGE	0.001**	-0.000**
	(0.000)	(0.000)
MWLIT	-0.022**	-0.211**
	(0.006)	(0.012)
MWHEAD	0.045**	0.233**
	(0.014)	(0.021)
MWDIF	-0.030**	-0.039**
	(0.025)	(0.053)
HHSIZ	-0.008**	0.042**
	(0.003)	(0.006)
CHILD	-0.0015	-0.062**
	(0.003)	(0.006)
HLIT	-0.007**	-0.227**
	(0.007)	(0.013)
HEMP	0.001**	0. 010**
	(0.000)	(0.000)

Instead of looking at the overall estimates, labour force participation is disaggregated in to sectorial employment: agricultural, industry and service. To gain a full picture of the long-lasting contribution of married women labour force participation we extend the probit models into multinomial probit models, adopting values of 0, for agriculture employment, 1, for Industry employment, and 2, for Service employment.

The marginal probabilities of the multinomial probit model are interpreted as the relationship of each predictor, X, to the probability that a married women in each category of sector compared to other categories. In the above table we are particularly interested in comparing the labor force

participation of married women who participate in agricultural sector (Base outcome) comparing with other sectors.

What is evident from the marginal effect of agricultural sector treated as base outcome is that: as married women's age increases the probability of married women joining the industry sector is higher comparing to agricultural sector and the reverse is true for service sector comparing with agricultural sector.

Comparing with Agricultural sector as married women's literacy rate increases their likelihood of joining both industry and service sector is lower by 2.2% and 21.1% respectively.
As married women's difficulty status gets worse the probability of married women joining both industry and service sector is lower by 3% and 3.9% respectively comparing with Agricultural sector. As number of kids and Married women's husband's literacy rate increases the likelihood of married women's joining the service and industrial sector is lower comparing with agricultural sector.

4.2.3 Instrument Variable estimation and Robustness test

As noted earlier, married woman is a function of observed and unobserved family characteristics and the standard estimates from the probit models might be potentially biased. We continue to build on the specification corresponding to the OLS estimation in our analysis of the effects of distance from school on female labour force participation. Thus, four categories of instrument variable tests which each category consists of all the dependent variables from a first OLS probit model is used. Identifying this instrumental variables, Two Stage Least Square (2SLS) estimates were carried out by applying a robust generalized method of moments (GMM) estimation technique that gives robust standard errors in each IV estimations results.

We start our exploration of the effect of distance from school on married female literacy rate with two-stage least squares regression results in Table 9. The results in Table 9 shows that the marginal probabilities from these models are smaller in magnitude than the estimates seen in the probit models. As we can see from the table below the standard IV estimator in all categories shows that married female's literacy rate, difficulty, household size and husbands employment

rate increase the probability of attending primary to preparatory school, in relation to those who never had the chance to go to primary school - preparatory school centers at all.

As seen in the table below, tests generated from STATA using 'ivreg2', the standard IV estimate that used distance from school as an instrument variable is valid and all the instruments have passed the over-identification test with P value 0.000. The same is true with the under-identification tests that all IV categories are relevant and have correlation with married female labour force participation. Also, the Kleibergen-Paap statistics for both IV models are much greater than 10, implying that the estimations are not weakly identified

Table 9: Results of Instrument Variable Estimation

Variables	Standard IV Primary_school_1_4_KM MFX	Standard IV Primary_school_5_8_KM MFX	Standard IV Secondary_school9_10_KM MFX	Standard IV Preparatory _KM _10_KM MFX
MWLIT	0.616**	0.723**	0.843**	0.886**
	(0.091)	(0.086)	(0.079)	(0.077)
MWAGE	-0.003**	-0.004**	-0.005**	-0.005**
	(0.001)	(0.001)	(0.001)	(0.001)
MWHEAD	-0.076**	-0.080**	-0.085**	-0.086**
	(0.019)	(0.020)	(0.021)	(0.021)
MWDIF	0.187**	0.191**	0.195**	0.196**
	(0.038)	(0.039)	(0.041)	(0.042)
HHSIZ	0.024**	0.028**	0.033**	0.035**
	(0.005)	(0.005)	(0.005)	(0.005)
CHILD	-0.045**	-0.054**	-0.064**	-0.068**
	(0.009)	(0.008)	(0.008)	(0.008)
HLIT	-0.171**	-0.215**	-0.263**	-0.281**
	(0.038)	(0.036)	(0.034)	(0.033)
HEMP	0.001**	0.001**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)

Table 10: Results of Robustness tests

Married Women Labour Force Participation	**Standard-IV Primary_school_1_4_KM**	**Standard-IV Primary_school_5_8_KM**	**Standard-IV Secondary_school9_10_KM**	**Standard-IV Preparatory_KM _10_KM**
Underidentification test (Kleibergen-Paap rk LM statistic)	**200.934**	**244.986**	**299.702**	**330.282**
P-value	**0.0000**	**0.0000**	**0.0000**	**0.0000**
Weak identification test (Kleibergen-Paap rk Wald F statistic)	**215.255**	**265.113**	**339.134**	**371.935**
Stock-Yogo weak ID test critical values: 10% maximal IV relative bias	**16.38**	**16.38**	**16.38**	**16.38**
15% maximal IV relative bias	**8.96**	**8.96**	**8.96**	**8.96**
20% maximal IV relative bias	**6.66**	**6.66**	**6.66**	**6.66**
25% maximal IV relative bias	**5.53**	**5.53**	**5.53**	**5.53**
Hansen J statistic (overidentification test of all instruments)	**0.000**	**0.000**	**0.000**	**0.000**

CHAPTER 5

Conclusion and policy recommendations

5.1 Conclusions

This empirical study attempts to examine the factors that influence the decision of married women to participate in the labour force participation. It uses a longitudinal data set collected from Central Statistical Agency (CSA), 2015/16 Welfare Monitoring Survey using Probability Proportional to Size technique is applied. In doing so, we employed several alternative micro-econometric models such as probit and multinomial probit models. While the probit model predicts the long-term contributions of different variables on married women labour force participation, the multinomial probit model summarizes the cumulative estimate of sectorial employment on married women labour force participation. The IV models check whether the OLS estimates from the logit models are downward or upward biased, as married women labour force participation might be influenced by unobservable factors that might make it an endogenous variable.

Results from probit model revealed that Married women's Age, Literacy Status, Relationship to household, Difficulty Status, Husband's Literacy status and Husbands Employment were found to be strongly associated with MWLFP at 5% level of significance. House hold size and Number of children shows relatively weak association with MWLFP at 5% level of significance. Age is prolonged to likely increase married female labour force participation by 0.2% even though it is expected to have a diminishing effect at a certain level of age category. Accordingly, each of the variables found to be associated with MWLFP in the country were taken as candidate predictor variables.

As it is expected, another interesting result from this model is that husband's employment has a negative impact on MWLFP this is due to different reasons. For instance, it is always presumed that in a marriage if both parties are from different location, the wives are expected to move to the husband's city and later look for a new job. This is true even in cities and in the case of highly educated families. And as household size increases women's labour force participation decreases as well. This is due to a lot of women gave up their jobs to handle all the cooking and

other home duties, she has to have a fixed work schedule and spare enough time at home to attend such needs especially in families that cannot afford to cook.

Additional regression has implemented on this study which includes a categorical regional variable which is all regions in Ethiopia. From this result we can see only Benshangul and Dire Dawa regions versus Tigray region positively affects the Z-score by 0.5% and 3.99% respectively but both regions are not statistically significant. But all other regions versus Tigray region affect the Z-score negatively and all are statistically significant.

When disaggregated by sector using multinomial probit model, MWLFP has noticeable differences on different sectors, where agricultural sector treated as base outcome is that: as married women's age increases the probability of married women joining the industry sector is higher comparing to agricultural sector and the reverse is true for service sector comparing with agricultural sector.

Using the same data, we extend our exploration of the effect of distance from school on married female literacy rate with two-stage least squares regression. An interesting result from this regression is that as distance from school increases the literacy rate of married women increases with P-value statistically significant which then has a positive effect on married female labour force participation in agricultural sector. As distance from primary school increases in every four KM from 1KM - 8KM the effect of literacy rate on married women labour force participation increases from 61.6% to 72.3% and as distance at 10KM from secondary school preparatory school increases the effect of literacy rate on married women labour force participation increase by 84.3% to 88.6%.

5.2 Recommendations

Hence this study draws the following policy implication to enhance married women labour force participation; the results obtained from this study are of great concern to policy makers. In order to formulate policies to increase married women labour force participation in Ethiopia, it is important not only to understand the effect of the variables used in the study, but also on demographic and economic characteristics of other variables. In response to this challenge, this

paper suggests the following possible solution to increase married women labour force participation in Ethiopia.

1. The Ethiopian government should give more support and emphasis on those regions with high rates of married women unemployment. Additionally, further research on socio-cultural practices, distribution of education, women's workload, and other related factors should be emphasized. In order to decreases married women's unemployment levels in regions with lower levels, the socio-economic status of the regions has to be raised. As a consequence, gaps in level of unemployment between regions would be reduced and be uniform.
2. As mentioned in the previous chapter, education has a very high positive effect on married women labour force participation Policies that promote education and create more job opportunities should be implemented. For example, re-schooling or training of the less educated married women, increasing vocational training and labour market information. This would encourage more married women to go to work, and thus generate the income required that would enable more families in the regions to be able to increase their living standards.
3. As significant effect of married women difficulty status shows a positive correlation with MWLFP in both models government should increase a measure of affirmative action's reforming disability insurances to support the very poor, and to bring about rapid economic growth at the national level. To this effect, it is important to develop community-based interventions giving priority to very poor households to participate in the labour market, education, health facility and areas of job access.
4. Support to families with young children, in particular in the form of parental leaves and childcare subsidies are also identified as raising married women labour force participation.
5. Empowering females is an essential factor that affects the labour force participation of married women as it can directly affect the economy and productivity.
6. The government or concerned bodies should make the coverage of mass media uniform across all regions of Ethiopia.

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