

**Ethiopian Economics Association
(EEA)**



***Gender Balance and Women Economic
Empowerment for Gender-transformative
Policy in Ethiopia***

Helen Berga and Lamessa T. Abdisa

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Executive Summary

Greater participation of women in economic activities is an important pathway to poverty reduction and economic development. In Ethiopia, women account about half of the labor force and possess a significant potential to contribute for national growth. Ethiopia acknowledges the crucial role that woman empowerment plays in achieving the country's development goal as it is reflected in its legal and policy frameworks. Yet, the labor force participation of women is still far from the potential and there is notable gender gap concerning participation in measured economic activities. In sight of this, the study analyzes the status of gender gap in labor force participation and, factors which influence men's and women's decision to work and how much to work in wage and self-employment. Data from the recent round of the Ethiopia Socioeconomic Survey (ESS 2018/19) is mainly used for the study. The 2015/16 round of the same survey was also used for comparison purpose in the descriptive analysis section.

Overall participation of women in the labor force is found to be significantly lower than men. With the exception of non-farm enterprises ownership, relative to men, women show lower participation in all economic activities considered in the study. In wage employment, women participation is lower by half compared to men and those who participate are underrepresented in top positions while dominating elementary occupations. As to ownership of non-farm enterprises, significant gender disparity is not observed. However, women owned enterprises show less achievement in terms of various business performance indicators. Particularly, women owned enterprises seem to perform less in terms of sales, business legalization, number of hired workers and firm size.

Women's overall participation and hour of work are also found to be lower compared to men while controlling for various individual and household characteristics. Factors which explain such differences in participation and hour of work include age, education, religion, marital status, household headship, family size, wealth, non-farm income and residence. Among these, education is found to be the main factor which positively associate with women's overall participation in labor market. Marital status on the other hand is negatively associated with women participation in the labor market and work hour. Age and

household headship are factors which positively associate with women's decision to work and how much to work while family size is negatively associated with hour of work.

Similarly, the participation of women in wage employment is significantly lower than men while controlling for individual and household level predictors. Women with tertiary education show higher participation in wage employment compared to women with no such education. Age, household headship and wealth are additional factors which positively associate with women's participation in wage employment. Marriage, residence in rural areas, having large family size and non-labor income are factors which associate with lower participation of women in wage employment.

The participation of women in ownership of non-farm household enterprises is found to be relatively higher than men while relevant individual, household and business level characteristics are accounted. The business sales of women owned businesses are however significantly lower than those owned by men. Women's ownership of non-farm enterprises is negatively associated with the level education. Though having tertiary education is negatively associated with participation in self-employment, its effect on business sales is positive. Sale is also positively associated with business license, number of hired workers and operating cost. Family size and residing in rural areas are factors which associate with less participation of women in self-employment.

Using the Blinder-Oaxaca decomposition analysis, the unconditional wage gap between men and women is estimated to be 62.7%. Of this gender wage gap, 26.2% it explained while the remaining 73.8% is unexplained. Difference in age, education, religion, marital status, household headship, wealth and occupation account the explained part of the wage gap. Likewise, the unconditional sales gap for non-farm enterprises owners is estimated at 80.6% where 36% of it explained by model predictors. Education, religion, wealth, business license, operating cost and residence are factors which contributed to the explained part of sales gap.

Narrowing the gender gap in labor market participation and economic outcomes will require interventions ranging from improving the education status of women to shaping the role and responsibilities of women in the society. The importance of women education is indisputable but short-term policy measures

should also focus in creating job opportunities that fit with the current education level of women in the country. Women who participate in the labor market are observed to concentrate in informal and elementary occupations. Hence, for women's labor market participation to be empowering, the quality of jobs they are involved in should be equally emphasized as the number of participation. Marriage and other social responsibilities limit women's decision and intensity of work. Thus, interventions that gradually change traditional social norms, systems that support the participation of women in productive economic activities and policies that are gender sensitive are vital. Women owned enterprises should be given especial emphasis and support. Women entrepreneurs should be encouraged to legalize their business which is important firm expansion/growth. Knowledge and skill trainings on how to build business network are also important to widen market access for inputs and their products. Other government support programs such as providing finance and working premises should also preferentially target women owned enterprises given their high well-being improving potential yet weak performance.

1. Introduction

1.1. Background and Rationale of the Study

Women account about half of the human capital in countries across the world with equal productive capacity and potential to contribute for economic development as men. Greater participation of women in economic activities often measured by Female Labor Force Participation (FLFP) can promote inclusive socioeconomic growth and development. Gender balance in economic activity is key for growth by directly increasing labor supply and productivity, and indirectly boosting domestic demand and standard of living (Cuberes & Teignier, 2011; Fabrizio et al., 2020; Fatima & Sultana, 2009). Increased FLFP can also enhance equity and efficiency by improving the utilization of productive human endowment and bringing greater diversity in the labor market that can nurture new perspectives and skills for production and management (Fatima & Sultana, 2009; Loko & Diouf, 2009; Ostry et al., 2018; Psacharopoulos & Tzannatos, 1989). Moreover, higher FLFP is crucial in reducing income inequality and poverty through its impact on household income and welfare (Fabrizio et al., 2020; Fatima & Sultana, 2009; Hosney, 2015). In general, better integration of women in economic activity has a significant potential to lift economic welfare and should be a central goal of any country.

In Ethiopia, women constitute close to 50 percent of the total population and an estimated 46.6 percent of the labor force (WDI, 2019). However, their involvement in measured economic activity is way below its potential. According to Central Statistical Agency (CSA, 2020), among economically inactive urban population, women make up 62.4 percent which is much higher than 37.6 percent of men. The employment to population ratio in urban areas shows notable gender gap in economic activity standing at 39.9 percent for women and 60.6 percent for men. Also, 26.1 percent women in urban areas are found to be unemployed which is more than double compared to unemployed men of 12.7 percent. In addition, relatively larger percentage of young women in urban areas are unemployed where the female and male youth unemployment rates were estimated to be 31.7 percent and 18.8 percent, respectively (CSA, 2020). The same tendencies of gender disparities in economic activity are also observed at regional and national level (see CSA, 2006, 2014).

Women in Ethiopia work less hour than men with reported average working hour of 27 hours per week compared to 37 hours per week worked by their men counterparts (CSA, 2014). Gender disparities are also observed in type of occupation and sectors where women often concentrate in informal, low-skilled, and low-paid or unpaid jobs. Indeed, women account only 32.6 percent of skilled workers and 26.5 percent of managers and senior officials (CSA, 2014; World Economic Forum (WEF), 2019). Women on the other hand dominate clerical support (64.8 percent), service and sales (65.2 percent), personal care (70 percent) and elementary jobs like cleaning and helping (79.4 percent). Compared to men (14.7 percent), relatively higher percentage of women (23.1 percent) also work in informal sector of the economy (CSA, 2014). Though there are encouraging changes in the country, such gender disparities are observed to persist based on the recent urban employment-unemployment survey (CSA, 2020). Working in informal sectors with little regulation as well as in elementary jobs which require less skill entails women having low payment, job insecurity and limited access to social protection coverage like health and safety insurance, pensions and maternity leaves (International Development Research Center (IDRC), 2020). Gender gaps in key economic outcomes are also significant where 51 percent and 42 percent of the wage and income gender gaps respectively are still remain unclosed (WEF, 2019).

Though women possess promising potential to be entrepreneurs thereby contributing to job creation and economic growth, there is substantial gender gap regarding their participation and the performance of enterprises owned by them. The 2015 World Bank Enterprise Survey of Ethiopia show that women participated as owners and top managers only in 36.2 percent and 4.5 percent of the surveyed enterprises respectively (World Bank, 2014). Significant gender gap is also observed in the growth (Amha, 2015; Gebreeyesus, 2007) and survival (Woldehanna et al., 2018) of business where women owned firms show relatively low growth and survival rate compared to their men counterparts. Women entrepreneurs face various impediments including lack of access to finance; business training, information and networks; managerial and technical skill; previous business experience; access to raw materials; and limited time due to high burden of household and family responsibilities (Abagissa, 2013; Alene,

2020; Assefa & Cheru, 2018; Eshetu & Zeleke, 2008; Gebremariam, 2017; Solomon, 2010; ILO, 2003).

Such gender gaps in economic activities and outcomes are rooted in cultures, social norms and structural conditions which shape the roles, responsibilities and positions of women in the society. Women in Ethiopia often bear the high burden of household chores with no monetary return and face labor market segregation as they largely participate in informal sectors which are not officially counted as an economic activity. They also have low level of education as well as limited ownership of, and access to, productive resources and services, such as land, finance, training and time curtailing their ability and potential to partake in economic activities (IDRC, 2020; MOWCY, UNICEF Ethiopia, & SPRI, 2019).³ Bringing gender parity in socio-economic systems thus requires measures ranging from changing cultural and social norms to devising and implementing transformational gender policies. Change in social norms which redefines the role and position of women in a household and the society are needed to safeguard the betterment of women in education, employment, and overall economic activity. Gender transformative policy which treats gender issues as a special focus area instead of following a simple holistic approach which integrate them within already existing development policy models' is also very essential to meet targets which leads to gender balance in various spheres (Bekana, 2020).

Understanding factors which influence the labor force participation of women either in wage employment or self-employment in Ethiopia can offer important policy insights for raising economic growth and wellbeing. Examining women's decision to work, how much to work, and in which sectors to work as well as the factors that influence her decision to participate in the labor market are essential to design policies which can address obstacles that discourage women from working or devise new ways that encourage women's participation in the labor market.

³ The 2020 World Economic Forum's Gender Gap Index indicated that even if Ethiopia achieved a remarkable improvement by closing 70.5 percent of its gender gap (largely accounted by increase in women's presence in political institutions), the country is still far from ensuring gender parity in education and economic opportunities.

1.2 Objective of the Study

The general objective of this study is to assess the key gendered barriers that hinder women's participation in the labor force (wage employment and entrepreneurship) in Ethiopia. The specific objectives are;

- To review the current situation of gender gap in main economic outcomes and policy frameworks aimed at reducing gender inequality in Ethiopia;
- Identify gendered factors that determine individual's decision to participate in wage employment and entrepreneurship;
- Estimate and decompose gender gaps in economic outcomes of wage employment and self-employment; and
- Identify outcomes where the gender gap is high and examine factors which explain the observed gaps.

1.3 Research Questions

To attain the above objectives, the study attempts to address the following research questions:

- What factors do explain the gender gap in economic activities?
- What is/are known about the impact and effects of the practices and policies aimed at reducing gender gap in economic activities?
- Does gender matter in individual's decision to work, how much to work, and in which sector to work?
- In which outcome variable is the gender gap high and what are the underlying factors for this?

2. Theoretical and Empirical Framework

2.1 Theoretical Framework

The neoclassical model of labor-leisure choice or the income-leisure model is typically used by economists as a theoretical framework to analyze labor supply behavior. The model is applied to investigate factors that determine individual's decision to work (participate in the labor force) and how many hours to work. According to the neoclassical school of labor supply, individuals or

household members decision to enter the labor market is induced by their need for more income, and they work as far as they expect that the benefits from work is greater than those from household activities (Gary S Becker, 1965; Blundell & MaCurdy, 1999; Gronau, 1977; Mincer, 1962; Psacharopoulos & Tzannatos, 1989). The conventional labor-leisure choice model starts from a basic consumer theory where the objective of an individual is to maximize utility which is composed of within-period consumption of commodities C_t and leisure L_t at time t (Blundell & MaCurdy, 1999);

$$U(C_t, L_t)$$

The utility function (U) is assumed to be well behaved and will be maximized subject to the budget constraint which given as follows;

$$C_t + W_t L_t = Y_t + W_t T$$

Where W is the hourly wage rate, Y_t is non-labor income and T is the total time available. The left-hand side of the equation 2.2 shows pattern of expenditure while the right-hand side indicates source of income. The income that an individual has in his/her disposal comprises of unearned income (Y_t) and earned income ($W_t T$) if the individual devotes it full-time endowment at work. The unearned (Y_t) income includes all sources of income obtained from non-market work such as property/asset, inheritance and chance winning. The sum of income from the two sources is often defined as "full income" from which the consumer purchases consumption goods and leisure. This income concept can be denoted as M , so that

$$M_t = Y_t + W_t T$$

First-order conditions take the familiar form and are expressed as follows;

$$U_C(C_t, L_t) = \lambda_t$$

$$U_L(C_t, L_t) \geq \lambda_t W_t$$

Where U_C and U_L are the partial derivatives of the utility function with consumption goods and leisure respectively, and λ_t is the marginal utility of income.⁴ Solving the first-order conditions and using $H_t = T - L_t$ (where H_t is hours devoted to work at time t) as well as the definition of M_t in terms of Y_t , the hours of work rule is given as,

$$H_t = H(W_t, Y_t)$$

The income-leisure model mainly examines labor supply in relation to wages and incomes with given work-leisure preferences. Wage rate change makes work more attractive having two effects on labor supply; the substitution effect and the income effect. The substitution effect of change in wage rate is positive on labor supply or hours of work. The higher the wage rate means increased opportunity cost of leisure making work more attractive than leisure for those who are already actively participating in the labor force. Higher wage rate also induces new labor supply in the market by attracting those who are not working. However, the income effect of change in wage rate reduces hours of work by making additional work less desirable, since the same level of income can be achieved with less work. Assuming leisure as a normal good, as income increases due to higher wage, more leisure will be demanded resulting less hours of work. Thus, the effect of higher wages on decision to work or how much to work is vague and it depends on the individual's work-leisure preference (that is, the value placed on more work relative to higher earnings). Yet, the effect of increase in non-labor (unearned) income on labor supply is always negative (Psacharopoulos & Tzannatos, 1989).

Generally, in the basic neoclassical labor supply model, the decision to work and, if so, for how many hours to work is contingent on the wage rate, non-labor income and preferences. The model ignores the explicit treatment of non-economic factors that can affect labor supply which are subsumed in analysis as "preferences" and are assumed to be determined exogenously (Psacharopoulos and Tzannatos, 1989). However, individual and/or household attributes as well as

⁴ If the inequality in 2.4 holds strictly then the individual is not working and $L_t = T$. The wage, W_R , such that $U_L(C_t, L_t) = \lambda_t W_{Rt}$ is the reservation wage below which the individual will not work.

social factors are key in determining labor supply decisions. The basic income-leisure equation of hours of work rule thus can be augmented with individual, demographic and social factors that can affect labor supply, and it is given as follows;

$$H_t = H(W_t, Y_t, X_t)$$

Where X_t includes all observed and unobserved individual and social attributes which can influence labor supply (Blundell & MaCurdy, 1999).

When it comes to women labor supply, similar factors also apply in affecting their decision to participate in the labor market (Mincer, 1962). However, the labor force participation of women appears to depend much more on social aspects than men which often shades the observed relationship of women's participation in the labor market with economic variables of wages and incomes (Psacharopoulos & Tzannatos, 1989). The Becker's time allocation model (Becker, 1965) which based on the neoclassical labor supply theory can be used to explain women's decision to participate or not to participate in the labor market. According to the model, women decide to participate or opt out of the labor force by comparing the values of her time in the labor market with the values of her time spend on domestic activities or home production.

The relative paybacks from time spent on market work and domestic activities depends on the prevailing market wage rate, individual attributes (such as age, education, and number of children) and policies (such as paid maternity leave or childcare provision) which in turn affect women's labor supply (Christiansen et al., 2016; Güven-Lisaniler & Bhatti, 2005). In addition to the typical economic variables of wages and incomes, empirical studies have indicated that many social and demographic variables influence female labor supply functions. Level of economic development, public polices, education, age, marital status, fertility, head of household's status, ownership and control of assets, area of residence, urbanization and employment structure are few to mention. Key factors which influence women's participation in the labor force (either as wage employment or self-employment) are discussed in the next section with the support of empirical evidence.

2.2 Empirical Framework

The vast body of literature on women's involvement in the labor market identified a number of variables which affect women's labor market participation rate and can be broadly classified as micro and macro level factors. The macro literature focuses on the role of economic development and various policies on women's aggregate labor supply (Christiansen et al., 2016; Gaddis & Klasen, 2014; Klasen, 2019; Altarawneh, 2020). Such studies often use time-series data and analyze cross country differences in FLFP. One area of study which captures researchers attention is the U-shaped (feminization U) hypothesis which dates back to Sinha (1967). The hypothesis suggested that the relationship between FLFP and economic development follows a U-shape. In particular, the hypothesis states that FLFP first declines at early stages of industrialization and starts to rise again at later stages of economic development. The reason behind such relationship is that at early stages of economic development, agriculture is the main economic activity and women participation is high because most women work in family farms. Working in family farms enables women to combine economic activity with other household chores such as taking care of children.

As the economy transits from agriculture dominated to industrial lead, FLFP decreases due to the dwindled role of the agricultural sector as the main employer of women and shift in the structure of the economy towards a more formal sector. The rationales for such trend of FLFP includes low education attainment, socio-cultural restraints and high manual labor requirement of industrial jobs all of which limiting women (especially married women with children) from working outside home and exploit emerging employment opportunities in the industrial and other formal sectors (Boserup, 1970; Goldin, 1995). Also, industrialization and the thriving of the formal sectors boosts overall productivity and household earnings mainly by male household heads having a negative income effect on female labor supply (Klasen, 2019). With continued structural change inducing expansion of the service sector, education opportunities, and family planning and childcare services, FLFP starts to increase again. At later stages of economic development, women will have a higher chance of participation in the labor market given their improved education, declining fertility rate and increased availability of service sector and part-time jobs. The

U-shaped hypothesis of FLFP was tested by several empirical studies and proved to hold in most cases (Clark et al., 2003; Fatima & Sultana, 2009; Gaddis & Klasen, 2014; Goldin, 1995; Luci, 2009; Mammen & Paxson, 2000; Psacharopoulos & Tzannatos, 1989; Tam, 2011).

Another stand of literature from the macro perspective analyzes the effect of gender-sensitive public policies on FLFP. Gender-sensitive public policies can take various forms including investing in women education and basic infrastructures (such as water, electricity, road); providing adequate and affordable child care services; allowing paid parental leave and avoiding discriminatory tax provisions (Christiansen et al., 2016; Fabrizio et al., 2020). Lack of knowledge and skill are main constraint for women to participate in labor force. Hence, policies which support women education and provide them with greater educational opportunities are shown to increase FLFP particularly in developing countries (Heath & Jayachandran, 2017; Sackey, 2005). Women in developing countries, especially those in rural areas, are mainly responsible for fetching water and collecting firewood. Policies which are designed to improve access to these basic services has significant positive effect on women's participation in the labor market by reducing the burden of unpaid work and freeing up her time to participate in income-generating activities (Dinkelman, 2011; Koolwal & van de Walle, 2013). Also, better road access and improved transportation service is indicated to increase FLFP more so than men (Lei et al., 2019). Moreover, policies which enable women to undertake household responsibilities in parallel with market work such as paid parental leave and subsidized child care services can lift women's participation in the labor market (see e.g., Andersen & Havnes, 2019; Blau & Kahn, 2013; Kalb, 2018). Such policies are important for women to maintain the work-life balance. In advanced nations, empirical evidence show that income taxation also has a significant influence on FLFP (Christiansen et al., 2016; Fabrizio et al., 2020).⁵

At micro level, various empirical studies have tried to explain FLFP by differences in personal, demographic, household, social and labor market characteristics. Education is the most important factor in affecting FLFP where

⁵ In countries with joint taxation system, the income of married women is taxed highly because taxes are calculated by combining husband's and wife's income resulting an adverse effect on women's labor supply decisions (Bick & Fuchs-Schündeln, 2017).

women with more education are likelier to participate in the labor force than those with less or no education (Ackah et al., 2009; Khanie, 2019; Sackey, 2005; Yakubu, 2010). Education enhances women's incentive to participate in the labor market as it raises the chance of getting better jobs with high earnings compared to household work (Becker, 1975; Eckstein & Lifshitz, 2011; Schultz, 1961). The higher earning potential which comes with education increases the opportunity cost of not working inducing more labor supply by women. Also, education is investment in human capital and an educated women has to work to compensate for the cost of the investment (Khanie, 2019; Psacharopoulos & Tzannatos, 1989). Studies conducted across Europe revealed that countries with higher women educational attainment exhibit a smaller gender gap in employment (Pissarides et al., 2005). Empirical studies also show that women's investment in education can give more return than men (Psacharopoulos & Tzannatos, 1989). The positive effect of education on women's labor supply also comes through reduced fertility rate. Particularly, studies show that women with more education tends to have less children which increases their chance of participating in the labor market (Lam & Duryea, 1999; Mujahid, 2014; Sackey, 2005).

The women's age, marital status and fertility rate are additional factors which shape the participation of women in the labor market. Age is an important factors in determining FLFP where women who are within the age of child bearing and rearing often have a lower participation rate than those outside such age (Eckstein & Lifshitz, 2011; Heckman & MaCurdy, 1980; Uwakwe, 2004). Married women with children (with large families) have lower participation rate because family responsibilities and taking care of children increases the value of time spent on domestic activities. The more time a women spent on home production, the less time she has to spent for market work (Bloom et al., 2009). Especially, the presence of young children (aged 5 or below) in the household adversely affects the labor force participation of women. Some empirical studies, however, show that having more children can increase women's participation in the labor force due to increased income need to cover the expense of large family size. Household assets, husband's income and participation in economic activities, and place of residence (urban vs. rural) are also additional factors which affect women's participation in the labor market (Hosney, 2015).

Social norms, attitudes and religion can also affect women's participation in the labor market. Social norms and attitudes towards women's role in society can adversely affect women's employment. In developing countries, women (especially married women) are considered as homemakers primarily responsible for household activities of taking care of husband and children, cleaning and cooking (Fernández, 2013; Khadim & Akram, 2013; Psacharopoulos & Tzannatos, 1989). Such patriarchal systems constraints women from participating in paid economic activities (Güven-Lisaniler & Bhatti, 2005; Mukherjee, 2015). Stereotypes about gender roles not only affects women's participation rate but also her sector of participation where women are often perceived to be unfit for higher managerial positions and occupations requiring technical skills. Religion could also affect FLFP where empirical evidence show that countries with strong religious views about the role of women in the society exhibit lower women participation rate in the labor market (Psacharopoulos & Tzannatos, 1989).

3. Methodology and Data

The discussion in the previous sections indicated that FLFP is determined by several factors ranging from micro level individual and household characteristics to macro level variables of economic development and government policies. The main focus of this study is to analyze factors affecting individual women's labor supply decision (either in wage or self-employment) in Ethiopia. The study will also review the current situation of gender gap in main economic outcomes and policy frameworks aimed at reducing gender inequality in Ethiopia. Moreover, the study will estimate and decompose gender gaps in economic outcomes of wage employment and self-employment. Furthermore, the study will also identify outcomes where the gender gap is high and examine factors which explain the observed gaps. The proposed analytical approaches, models, estimation methods and data for analysis are described in the following subsections.

3.1 Labor Force Participation, Hour of Work and Earning

In order to investigate factors which influence women's labor force participation, her intensity of participation (hour of work) and earning, this study applied the Heckman sample selection model. The Heckman procedure (also called Heckit model) is a method used to estimate regression models which suffers from sample selection bias due to incidental truncation where the dependent variable is only observable for a certain outcomes of another variable (Wooldridge, 2013). Classically, the model is applied to estimate female labor supply models where women's wage or hour of work is only observed if she decides to participate in the labor market

The Heckman model includes two separate equations, the sample selection equation and the outcome equation. Given a latent variable y_1^* and the outcome latent variable y_2^* where for this study, y_1^* denotes the unobserved propensity to work and y_2^* denotes the supply of working hours or wage, the selection equation can be expressed as:

$$y_1 = \begin{cases} 1 & \text{if } y_1^* > 0 \\ 0 & \text{if } y_1^* \leq 0 \end{cases}$$

And the outcome equation is given as follows:

$$y_2 = \begin{cases} y_2^* & \text{if } y_1^* > 0 \\ . & \text{if } y_1^* \leq 0 \end{cases}$$

What follows from the two equations system is that whenever y_1^* is positive then y_2 will be known, whereas for non-positive y_1^* , y_2 is non-observable.

Considering a linear wage equation;

$$w_i^* = x_{1i}'\beta_1 + \varepsilon_{1i}$$

Where x_{1i} denotes a vector of exogenous characteristics and w_i^* denotes women i 's wage. The wage w_i^* is not observed for women who are not working. The selection equation which describes weather a woman is working or not is specified as standard probit model.

$$h_i^* = x_{2i}'\beta_2 + \varepsilon_{2i}$$

With the following observation rule;

$$w_i = w_i^*, h_i = 1 \quad \text{if } h_i^* > 0$$

w_i not observed, $h_i = 1 \quad \text{if } h_i^* \leq 0$

Where w_i is the women's actual wage and the binary variable is h_i , simply indicates working or not working. The model is completed by distributional assumption on unobserved errors ($\varepsilon_{1i}, \varepsilon_{2i}$), usually a bivariate normal distribution with expectations zero, variances σ_1^2, σ_2^2 , respectively and covariance σ_{12} . The variables in x_1 and x_2 can be the same or different depending on model specification (Verbeek, 2004).⁶

The conditional expectation of the outcome variable, given that women i is working, given by;

$$\begin{aligned} E\{w_i|h_i = 1\} &= x_{1i}'\beta_1 + E\{\varepsilon_{1i}|h_i = 1\} \\ &= x_{1i}'\beta_1 + E\{\varepsilon_{1i}|\varepsilon_{2i} > -x_{2i}'\beta_2\} \\ &= x_{1i}'\beta_1 + \frac{\sigma_{12}}{\sigma_2^2} E\{\varepsilon_{2i}|\varepsilon_{2i} > -x_{2i}'\beta_2\} \\ &= x_{1i}'\beta_1 + \sigma_{12} \frac{\phi(x_{2i}'\beta_2)}{\Phi(x_{2i}'\beta_2)} \end{aligned}$$

The conditional expectation of the outcome variable (wage in the above case) equals $x_{1i}'\beta_1$ only if $\sigma_{12} = \rho_{12}$ where ρ_{12} is the correlation coefficient between the two errors. If the error terms from the two equations are uncorrelated, the outcome equation can be consistently estimated by ordinary least squares (OLS). A sample selection bias in the OLS estimator arises if $\sigma_{12} \neq 0$. The term $\phi(x_{2i}'\beta_2)/\Phi(x_{2i}'\beta_2)$ is called the inverse Mill's ratio as well as Heckman's lambda as it denotes $\lambda(x_{2i}'\beta_2)$.

⁶ If the variables are the same, i.e., the restriction that $x_{1i}'\beta_1 = x_{2i}'\beta_2$ and $\varepsilon_{1i} = \varepsilon_{2i}$ is imposed the model will be a standard Tobit model (Tobit I).

The Heckman sample selection model is often estimated in two steps which is based on the following regression;

$$y_i = x'_{1i}\beta_1 + \sigma_{12}\lambda_i + \eta_i,$$

Where

$$\lambda_i = \frac{\phi(x'_{2i}\beta_2)}{\Phi(x'_{2i}\beta_2)}$$

The error term in the above model equals $\eta_i = E\{\varepsilon_{1i}|x_i, h_i = 1\}$. Given the assumption that the distribution of ε_{1i} is independent of x_i (but not of h_i), η_i is uncorrelated with x_i and λ_i by construction. This means β_1 and σ_{12} will be estimated by running a least squares regression of y_i up on the original explanatory variables x_{1i} and the additional variable λ_i . The unknown element in λ_i which is β_2 will be estimated consistently by probit maximum likelihood applied to the selection model (Verbeek, 2004).

3.2 Specification of the Heckman model

The participation model (selection equation)

Given the cross-sectional structure of dataset that will be used for this study, the determinants women's participation in the labor force is specified as follows;

$$FLFP_i^* = \alpha_i + \beta X_i + v_i$$

Where $FLFP_i^*$ is a dummy variable which takes 1 if the women participate in the labor market and 0 if she does not. The participation equation, $FLFP_i^*$ is positive only if the dummy variable equals one. β is a vector of unknown parameters and v_i is the error term. The decision to participate depends on a vector of explanatory variables X_i . Based on the theoretical and empirical framework in the previous section, women's labor force participation is hypothesized to depend on the following factors;

$$FLFP_i = f\{\text{personal and demographic factors; household factors; geographic location factors; others}\}$$

Where;

- Personal and demographic factors include education, age, marital status, number of children, head of household's status, ownership and control of assets, religion
- Household factors include household's labor and non-labor income, household's asset, number of dependents, husband's education and income (for married women),
- Geographic location factors include area of residence (urban and rural)

The labor force participation status of the woman at time t ($FLFP_i$) takes the value 1 if the i -th woman is in the labor force and zero otherwise. Participation is defined to include a woman declaring a job, paid or unpaid, which captures those women participating either in paid work or unpaid domestic work (family farm or business). The selection equation is estimated using a standard probit model.

The wage equation (the outcome equation)

The wage equation is specified by including the estimated inverse Mill's ratio ($\hat{\lambda}_{it}$) from the probit model for each period.

$$w_i = Z_i\beta + \hat{\lambda}_i + e_i$$

Where, w_i is wage earned by individual i , Z_{it} is vectors of individuals specific factors which explain earning and e_i is error term. w_i is not observed unless the individual is not participating in wage employment.

3.3 Decomposition of gender gaps in key economic outcomes

To decompose gender gaps in economic outcomes, this study applied the Blinder-Oaxaca (1973) decomposition technique based on Jann (2008). The Blinder-Oaxaca technique was originally used in labor economics to decompose earning gaps and to estimate the level of discrimination. The method can be used to study labor-market outcomes by groups decomposing mean differences in the outcome variable based on linear regression models in a counterfactual manner.

It divides the difference in outcome variable between two groups into a part that is “explained” by group differences in observed predictors (characteristics) and a residual (unexplained) part that cannot be accounted for by observed predictors. This “unexplained” part is often used as a measure for discrimination, but it also incorporates the effects of group differences in unobserved predictors (Jann, 2008).

Given there are two groups, A and B (women and men in the current study); an outcome variable, Y; and a set of predictors. The main question is how much of the mean outcome or the expected value of the outcome variable, i.e., $E(Y)$, is accounted for by group differences in the predictors.

$$R = E(Y_A) - E(Y_B)$$

Based on a linear model

$$y_g = x_g' \beta_g + \epsilon_g, \quad E(\epsilon_g) = 0 \quad g \in (A, B)$$

where X is a vector containing the predictors and a constant, β contains the slope parameters and the intercept, and ϵ is the error, the mean outcome difference can be expressed as the difference in the linear prediction at the group-specific means of the explanatory variables. That is,

$$R = E(Y_A) - E(Y_B) = E(X_A)' \beta_A - E(X_B)' \beta_B$$

Where $E(\beta_g) = \beta_g$ and $E(\epsilon_g) = 0$ by assumption.

To identify the contribution of group differences in predictors to the overall outcome difference, equation 3.8 can be rearranged and written as;

$$R = \{E(X_A) - E(X_B)\}' \beta_B + E(X_B)' (\beta_A - \beta_B) + \{E(X_A) - E(X_B)\}' (\beta_A - \beta_B)$$

Where;

$E = \{E(X_A) - E(X_B)\}' \beta_B$ is amounts to the part of the differential that is “explained” by differences in the predictors (also called the “endowments effect”).

$C = E(X_B)'(\beta_A - \beta_B)$ is the portion of differential attributable to differing coefficients and;

$U = \{E(X_A) - E(X_B)\}'(\beta_A - \beta_B)$ is the unexplained portion of the differential.

The sum of C and U measures differential attributed to discrimination.

The estimation of these components is given as;

$$\hat{R} = \bar{Y}_A - \bar{Y}_B = (\bar{X}_A - \bar{X}_B)'\hat{\beta}_B + \bar{X}_B'(\hat{\beta}_A - \hat{\beta}_B) + (\bar{X}_A - \bar{X}_B)'(\hat{\beta}_A - \hat{\beta}_B)$$

Where $\hat{\beta}_A$ and $\hat{\beta}_B$ are the least-squares estimates for β_A and β_B , obtained separately from the two group-specific samples, and the group means \bar{X}_A and \bar{X}_B are estimates for $E(X_A)$ and $E(X_B)$.

3.4 Explaining observed gender gaps in key economic outcomes

In order to explain the observed gender gaps in outcome variable of interest, detailed decomposition that can subdivide components into the respective contributions of each covariate will be conducted. Such analysis is useful to investigate the detailed contributions of the single predictors or sets of predictors to observed group-wise differences in outcome variables.

Identifying the contributions of the individual predictors to the explained part of the differential is not complicated because the total component is a simple sum over the individual contributions. Individual predictor's contribution to the explained part is given as;

$$\hat{E} = (\bar{X}_A - \bar{X}_B)'\hat{\beta}_B = (\bar{X}_{1A} - \bar{X}_{1B})'\hat{\beta}_{1B} + (\bar{X}_{2A} - \bar{X}_{2B})'\hat{\beta}_{2B} + \dots$$

Where $\bar{X}_1, \bar{X}_2 \dots$ are the means of the single predictor, and $\hat{\beta}_1, \hat{\beta}_2, \dots$ are the associated coefficients. The first summand reflects the contribution of the group differences in \bar{X}_1 ; the second, of differences in \bar{X}_2 ; and so on. The individual predictor's contribution to the unexplained part can also be decomposed in a similar manner (Jann, 2008).

3.5 Data

This study used the Ethiopian Socioeconomic Survey (ESS) which is collected by the Central Statistics Agency of Ethiopia (CSA) in collaboration with the World Bank Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) team. The ESS is conducted in four waves so far; ESS1 (2011/12), ESS2 (2013/14), ESS3 (2015/16) and ESS4 (2018/19). The first wave of ESS began as Ethiopia Rural Socioeconomic Survey (ERSS) in 2011/12 and it covered only rural and small-town areas while the subsequent waves were expanded to include all urban areas. The 2018/19 ESS (ESS4) is a new panel which is not a follow-up of the previous ESS waves. This study primarily uses the recent ESS (2018/19) dataset. The 2015-16 data is also utilized for comparison purpose in the descriptive analysis section.

The ESS survey provides a representative dataset on both urban and rural households covering all nine regional states and two administrative cities (Addis Ababa and Dire Dawa) of Ethiopia. The dataset has information on individual and household demographic characteristic (such as education, age, marital status, health); labor and time use; financial inclusion; assets ownership and user right; food and non-food expenditure; household nonfarm activities and entrepreneurship; food security and shocks; safety nets; housing conditions; physical and financial assets; credit; tax and transfer; and other sources of household income. The survey also contains information on community level information regarding access to basic services; economic activities, infrastructure; community organizations; resource management; changes in the community; key events; community needs, actions and achievements; and local retail prices. In addition, for agricultural households, information on post-harvest, post-planting and livestock ownership and production is available in the dataset. The labor and time use, and the non-farm enterprise modules are the primary data sources for this study.

4. Legal and Policy Framework

This section presents reviews of legal and policy frameworks adopted by Ethiopia which are aimed at reducing gender inequality and fostering women

economic empowerment. In recognition of the pivotal role that gender equality and women empowerment plays in achieving inclusive and sustainable economic growth, the Ethiopian government has been taking various legal and policy reforms. Since the adoption of the new Constitution in 1994, the issue of gender parity has been conveyed in various policies, legal frameworks, rules, and regulations of the country. Ethiopia is also a signatory of several international and regional gender parity agreements. The issue of gender equality has been expressed in the constitution itself, the family laws, penal code, gender policies, national development plans and the ratified international and regional treaties on gender equality (Beyene, 2015; Druza & Rodriguez, 2018).

The 1994 Constitution of Ethiopia was a key step forward in advocating the protection of fundamental rights of women and gender equality in the legal, economic, social, and political spheres (Beyene, 2015). The constitution grants women equal citizenship rights to men (Article 7) and ruled out gender-based discriminations (Article 25). Under Article 89(7), the state is deemed to be responsible in ensuring equal participation of women in all economic and social activities. In particular, women are entitled to equal rights in employment, marriage, access to and control over resources and political participation. The employment rights of women are stated under Article 42 and Article 35 which gives women equal right to work or employ, and get equal work-related benefits including wage, promotion, and pension. The constitution also entitled working women with fully paid maternity leave. The marriage rights are addressed under Article 34 which allows men and women to have equal rights during marriage and in divorce. Regarding property and land rights, the constitution states that women have full right in acquiring, administering, controlling, using, and transferring property including land. In the political realm, women are granted equal right to participate in political activities including voting (Article 38) and in designing development policy. By taking the historical legacy of inequality and discrimination suffered by women in Ethiopia into consideration, the constitution under Article 35(3) also entitled women with corrective and affirmative action. The aim of such measures is to enable women to compete and participate on the basis of equality with men in political, economic and social life as well as in public and private institutions. The state is also obliged to protect women from

traditional and harmful customs and practices which adversely affect their bodily and mental status (Beyene, 2015; Ogato, 2013; Drucza & Rodriguez, 2018).

Ethiopia also passed various proclamations and made a revision on civic, penal, and labor laws in order to address the issue of gender equality. The revised Family Law (2000) gives women equal right in marriage making notable reforms over the Civil Code of 1960. The revised law rose the minimum age of marriage for women from 15 to 18 years and puts mutual consent of the spouses as one of the requirements for marriage (Article 6). The law also entitled women with equal property right (Article 102) and joint management of family assets (Article 50). Women who lived with her partner for three or more years are granted a right to share any property owned by the household. The 2005 Penal Code of the country criminalizes various forms of violence against girls and women including harassment, sexual abuse, female genital mutilation, early marriage, abduction and physical violence in any form of union (Drucza & Rodriguez, 2018). Regarding labor rights of women, the Labor Proclamation No. 377 of 2003 forbids gender-based discrimination in employment and compensation. The proclamation also grants women with paid maternity leave. Any forms of discrimination in employment are also outlawed by the Federal Civil Servants Proclamation No. 515 of 2007. The pension rights of women are protected by the Public Servant Proclamation No. 714 of 2011 and the Private Organization Employees Proclamation No. 715 of 2012 in public and private sectors respectively (Beyene, 2015; UN Women, 2014).

In the policy sphere, Ethiopia announced the first National Policy on Women in 1993 which establishes the base and overall direction for the recognition and realization of gender equality. The principal objective of the Women's Policy of 1993 was to institutionalize the rights of women in various domains. It aimed at introducing gender sensitive public policies and interventions by establishing suitable platforms and arrangements in government offices and institutions (Ogato, 2013). Accordingly, the Women's Affairs Office and other subsidiary structures: the Women's Affairs Sector in all the regional administrative offices, and the Women's Affairs Departments in all ministries and government organizations were established (Drucza & Rodriguez, 2018).

The National Action Plan for Gender Equality (NAP-GE) was developed by the Ministry of Women's Affairs (MoWA) in 2006 which was implemented

during the period 2006-2010. The policy mainly aimed at ensuring gender equality in social (such education and health related rights of women), economic (poverty reduction and economic empowerment of women) and political aspects of life. The policy also focused on women's empowerment in decision-making and creating institutional mechanisms to ensure the right of women. In addition, NAP-GE emphasized the need for sex-disaggregated data to develop gender sensitive indicators. Moreover, the policy made the first attempt to frame and integrate gender issues in national development plans mainly the Sustainable Development and Poverty Reduction Program (SDPRP). The NAP-GE also proposes areas in which the policy can be linked with Plan for Accelerated and Sustained Development to End Poverty (PASDEP) (MoWA, 2006).

Ethiopia also reflected the issue of gender equality in its National Development Plans. In line with the constitution and the NAP-GE, in 2006, the MoWA adopted the first Ethiopian Women Development Package followed by the second package in 2017. The issue of gender equality and mainstreaming is included in PASDEP which was the main poverty reduction strategy of the government for the period 2005/06-2009/10 (Ministry of Finance and Economic Development (MoFED), 2005). The NAP-GE is incorporated as integral part of the PASDEP forming the core of its gender strategy. The PASDEP recognizes the essential role of women participation in economic development and gender equality is perceived as way to eliminate poverty. The plan intended to achieve gender equality by giving women (especially rural women) equal access to productive resources and services, assisting poor women with safety net programs, providing women and girls with equal chance of education, promoting gender mainstreaming in government institutions and increasing the involvement of women in managerial government positions (MoFED, 2005).

The consecutive Growth and Transformation Plans, GTP I (2010/11-2014/15) and GTP II (2015/16-2019/20) considered women's empowerment as key step towards achieving the development goals of the country. In GTP I, the issue of women, children and youth is treated as interlinked. The plan focused on promoting girls' education and increasing the number of female teachers in schools. In addition, it aims at increasing the economic participation of women in rural areas by providing them with extension services and productive resources. In addition to agriculture, women's and youth's participation in non-farm

activities is also encouraged in GTP I. The plan also intends to assist women microenterprise owners to transform their businesses to small and medium scale enterprises (MoFED, 2010). Building on GTP I, the second growth and transformation plan (GTP II, 2015/16-2019/20) also emphasized the issue of women and youth by recognizing various challenges faced by such vulnerable groups. GTP II puts strengthening women and youth organizations and ensuring the active participation of such organizations in the development and governance programs of the country as a strategic plan. The plan also designed to ensure equal participation and benefits for women and youth in political, economic and social domains. The challenges faced by rural women in accessing extension services, agricultural technologies and various productive resources and services are continued to receive recognition in GTP II (National Planning Commission (NPC), 2016).

Apart from domestically issued laws and policies, Ethiopia signed and adopted a number of international and regional agreements on gender equality. These include the Convention on the Political Rights of Women, Convention on the Elimination of All Forms of Discrimination against Women, the 1995 Beijing Platform for Action, the Declaration on the Elimination of Violence against Women and the International Conference on Population and Development. Ethiopia is also a signatory of international labor conventions that protect the right of women employees: C100 Equal Remuneration, which guarantees equal remuneration and calls for ending workplace discrimination; C111 Discrimination (Employment and Occupation), which promotes the rights of working women; and C156 Workers with Family Responsibilities, which promotes equal opportunities and equal treatment for men and women workers. Ethiopia endorsed the MDGs of 2000 which includes women's socioeconomic issue as part the goals (such as providing equal access to education and reducing maternal mortality) and made considerable effort to achieve the targets (Beyene, 2015; UN Women, 2014; Druzca & Rodriguez, 2018). Similarly, Ethiopia is striving to attain the Sustainable Development Goals (SDGs) which replaced the MDGs in 2015 where gender equality is stated under goal five of the SDGs.

5. Situational Analysis

5.1 Status of labor force participation

This section presents an assessment of the current status of gender gap in economic activities by conducting situational analysis based on the Ethiopia Socioeconomic Survey (ESS) dataset. For this study, working age population is defined as individuals aged 15 years and older. For the descriptive analysis, participation in economic activities are defined based on two approaches; current and usual activity status (see CSA, 2006, 2014). In the current activity status approach, the economic activity status of an individual is determined based on a short reference period of seven days before the date of interview. Based on this approach, individuals who spent one hour or more during the reference week in productive activities (including agricultural activities; non-agricultural business activities; casual, part-time, or temporary labor; or any other paid work) are considered as active participants in the labor force. The usual activity status bases longer reference period (twelve months prior to the date of interview) to determine the economic activity status of an individual. Based on the usual activity approach, individuals who reported to engage in productive activities (including paid, unpaid, PSNP or casual, part-time, or temporary labor work) during the last twelve months from the date of interview are considered as active participants in the labor force.

Table 1: Working age individuals and activity status

Activity status	2015-16			2018-19		
	Total N	%Men	%Women	Total N	%Men	%Women
Working age individuals	13,503	47.86	52.14	16,962	47.01	52.99
Active individuals (Current)	7178	56.0	44.0	8547.0	58.4	41.6
Active individuals (Usual)	4,792	62.5	37.5	5248.0	59.4	40.6
%Active (Current)	53.2			50.4		
%Active (Usual)	35.5			30.9		

Source: Based on ESS (2015/16; 2018/19)

In 2018-19, the total numbers of working age individuals are 16,962 out of which 47% are men while 53% are women. About 50% of the working age

individuals are found to be currently active while 31% are usually active. Among currently active individuals, 58% are men while 42% are women. Similarly, women account 41% of usually active individuals while the rest are men. In both 2015-16 and 2018-19, women participation in the labor force is significantly lower than men and it is not showing notable change over time.

Table 2: Characteristics of labor force participant (2018-19)

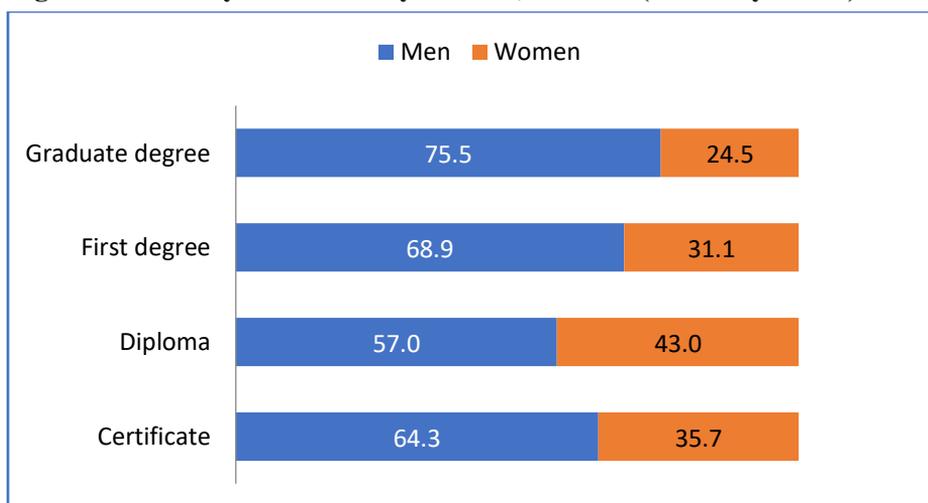
Characteristics	Current Activity			Usual Activity		
	Men	Women	Total	Men	Women	Total
Age	35	33	34	35	32	34
Household head	66.7	27.4	50.3	72.1	32.7	56.1
Family size	5.2	5.0	5.2	4.8	4.6	4.7
Religion						
Christian	62.9	66.5	64.4	66.5	72.9	69.1
Muslim	36.3	32.6	34.8	32.7	26.5	30.1
Others	0.8	0.8	0.8	0.8	0.6	0.7
Marital status						
Single	31.9	23.1	28.3	28.1	26.3	27.4
Married	65.2	58.0	62.2	68.6	52.6	62.1
Divorced, Separated, Widowed	2.9	18.9	9.6	3.3	21.1	10.6
Education						
Not Educated	32.2	49.1	39.2	26.4	38.2	31.2
Informal education	0.9	0.5	0.7	0.8	0.4	0.7
Primary Education	36.9	27.7	33.1	32.9	29.2	31.4
Secondary Education	15.3	11.0	13.5	17.5	13.4	15.8
Tertiary (Certificate)	1.7	1.3	1.5	2.4	2.0	2.3
Tertiary (Not complete)	0.9	1.4	1.1	1.4	2.0	1.6
Tertiary (Diploma)	4.2	4.5	4.3	6.1	7.0	6.5
Tertiary (First degree)	6.3	4.0	5.3	9.9	6.6	8.5
Tertiary (Graduate degree)	1.6	0.7	1.2	2.6	1.2	2.0

Source: Based on ESS (2015/16; 2018/19)

The average age of participants in current and usual activity is 34 years where women participants are by one or two year/s younger than their men counterparts. Only 27% of currently active women are household heads compared to 67% of men. Similarly, the share of usually active men household heads is 72% which is significantly higher than 33% of women participants. Majority of the participants are married (62%) where the percentage of married men is relatively higher than women. Compared to men, higher percentage of women are divorced, separated, or widowed. Looking into the education profile, majority of the labor force participants have no education where the share of uneducated women is higher than men both in the case of current and usually active participants. Among those with some level of education, labor force participants with primary education as their highest level of education attainment dominate the sample. The share of individuals with tertiary education is below 15% and 25% for those currently active and usually active respectively.

As it is shown in Figure 1, the percentage of currently active women having tertiary education of certificate, diploma, first degree and graduate degree is significantly lower than men. For example, among currently active participants with graduate degree, only a quarter are women. Virtually the same gender disparities are observed in attainment of tertiary education for usually active participants and hence results are not reported.

Figure 1: Tertiary Education by Gender, 2018-19 (currently active)



Source: Based on ESS (2018/19)

5.2 Status of Labor force participation by types of activity and gender

Results from previous sections show that women in Ethiopia generally have less participation in the labor force especially in measured economic activities compared to men. Table 3 show the current activity status of men and women by types of economic activities (including agricultural, non-agricultural, temporary and wage). The percentage of women who participate in domestic activities (fetching water and collecting firewood) is significantly higher than men both in 2015-16 and 2018-19 indicating that the gender role of women in the society is not showing notable change over time. When it comes to agricultural activity, women participation is significantly lower than that of men. Women on the other hand have almost an equal participation with men in non-agricultural activities which are mainly household business. Participation in wage activity is generally low in the sample but women participation is even lower than men.

Table 3: Current Activity Status (Last seven days)

Activity	2015-2016			2018-2019		
	%	%	Diff.	%	%	Diff.
	Men	Women	Sig.	Men	Women	Sig.
Domestic	17.78	53.61	0.0000	20.75	48.98	0.0000
Agricultural	44.09	30.34	0.0000	39.14	22.80	0.0000
Non-Agricultural	10.58	10.71	0.8159	9.68	9.55	0.7632
Casual, part-time or temporary	5.82	2.95	0.0000	3.30	1.30	0.0000
Wage	9.44	5.41	0.0000	15.46	8.33	0.0000
Any activity*	62.16	44.89	0.0000	62.56	39.59	0.0000

Source: ESS (2015-16; 2018-19)

Note: For domestic activity, respondents were asked if they spent time in collecting water and firewood yesterday

*Excluding domestic activity

Similar gender disparities in labor force participation are also observed when considering the usual activity status of men and women. Table 4 shows the percentage of women who reported to participate in paid job is less than by half compared to men both in the 2015-16 and 2018-19. The percentage of men participating in unpaid work which include free or exchange labor to assist other

households is also higher than women. Even if Productive Safety Net Programs (PSNP) are often targeted to benefit women with low economic status, the percentage of women participating in such programs is found to be lower than men. In general, the overall economic participation of women measured by usual activity status is significantly lower than that of men.

Table 4: Usual Activity Status (Last twelve months)

Activity	2015-2016			2018-2019		
	% Men	% Women	Diff. Sig.	% Men	% Women	Diff. Sig.
Wage	13.54	7.33	0.0000	19.92	10.51	0.0000
Unpaid	27.36	14.36	0.0000	15.24	9.98	0.0000
PSNP	4.44	2.52	0.0000	5.17	3.70	0.0000
Casual, part-time or temporary	10.34	4.38	0.0000	5.13	2.11	0.0000
Any activity*	44.34	23.73	0.0000	35.85	20.99	0.0000

Source: Based on ESS (2015-16; 2018-19)

*Excluding PSNP job

5.3 Status of Labor force participation by types of activity and residence

As it is known, rural labor force participation in Ethiopia is dominated by agricultural activity. This is shown by Table 5 where 52.3% and 56.8% of the rural observations participate in agricultural activity compared to only 6% and 7.4% of individuals residing in urban areas in 2015-16 and 2018-19 respectively. On the other hand, relative to rural occupants, larger percentage of individuals in urban area participate in non-agricultural and wage activity. Considering current activity status, overall labor force participation (any activity) is higher in rural areas than in urban areas in both rounds of the survey. However, when usual activity status is considered, labor force participation is higher in urban areas than rural areas.

Table 5: Labor force participation by residence (current and usual activity)

Activity	2015-16		2018-19	
	% Urban	% Rural	% Urban	% Rural
Current Activity (Last seven days)				
Agricultural	5.97	52.27	7.40	56.82
Non-Agricultural	18.57	6.72	13.6	5.06
Casual, part-time or temporary	4.42	4.28	3.21	1.14
Wage	17.76	2.17	19.73	2.51
Any activity	42.63	58.38	40.99	61.11
Usual Activity (Last twelve months)				
Wage	23.92	3.56	24.47	4.05
Unpaid	10.87	25.43	6.35	19.41
PSNP	0.63	4.83	1.88	7.26
Casual, part-time or temporary	6.58	7.56	3.81	3.22
Any activity*	36.06	32.37	31.24	24.25

*Excluding PSNP job

Source: Based on ESS (2015-16; 2018-19)

Looking into labor force participation of men and women in urban areas, women in general have lower participation rate compared to men both in the case of current and usual activity status. Gender gaps are not however observed in non-agricultural, unpaid and PSNP activities where the participation rate of urban women in such activities is virtually the same as men.

Table 6: Labor force participation in urban areas by gender (current and usual activity)

Activity	2015-16			2018-19		
	% Men	% Women	Diff. Sig.	% Men	% Women	Diff. Sig.
Current Activity (Last seven days)						
Agricultural	7.14	5.01	0.0000	9.64	5.54	0.0000
Non-Agricultural	19.88	17.5	0.0419	14.18	13.11	0.1362
Casual, part-time or temporary	5.84	3.27	0.0000	4.74	1.93	0.0000
Wage	23.58	13.06	0.0000	26.2	14.32	0.0000
Any activity	51.05	35.81	0.0000	50.66	32.93	0.0000
Usual Activity (Last twelve months)						
Wage	31.97	17.39	0.0000	32.63	17.67	0.0000
Unpaid	10.82	10.91	0.9186	6.35	6.35	0.9997
PSNP	0.5	0.73	0.335	1.24	2.41	0.0000
Casual, part-time or temporary	9.77	3.99	0.0000	5.47	2.41	0.0000
Any activity	45.3	28.58	0.0000	39.71	24.18	0.0000

Source: Based on ESS (2015-16; 2018-19)

Similar to urban areas, rural women's labor force participation rate is significantly lower than men except in the case of non-agricultural activities. In 2018-19, rural women's participation rate in agriculture is 26.8 percentage point lower than men. This is expected because 73.6% of households in rural areas are male headed and main agricultural resources like land are often owned by men. In rural areas, generally there is little participation in paid activity and compared to men; women's participation is significantly lower.

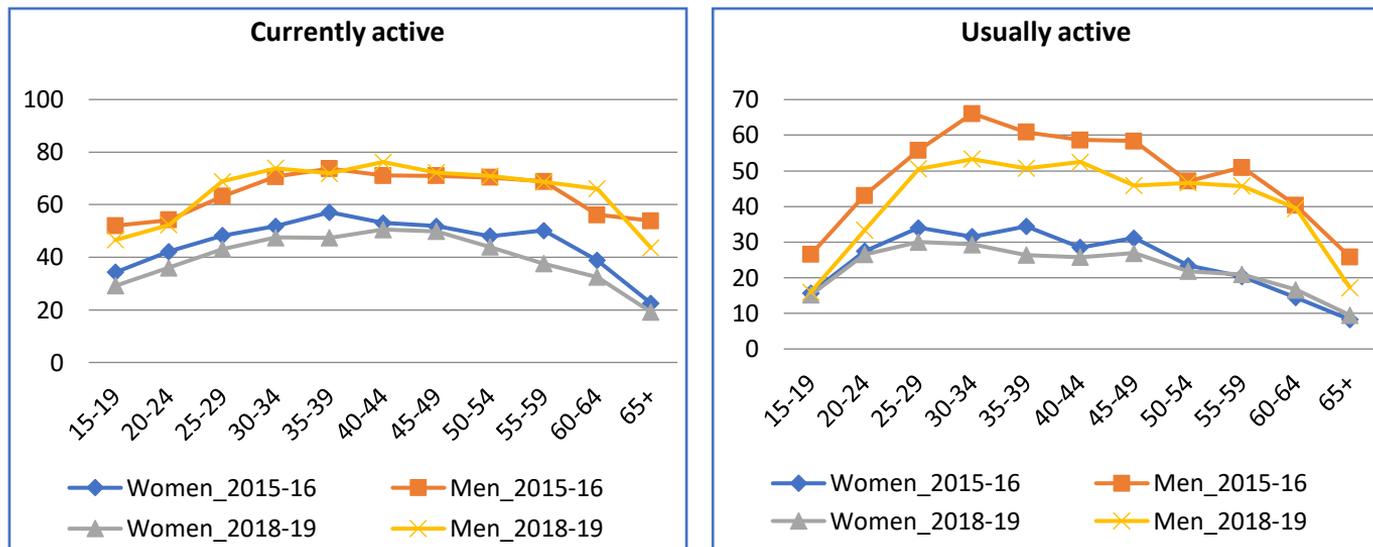
Table 7: Labor force participation in rural areas by gender (current and usual activity)

Activity	2015-16			2018-19		
	% Men	% Women	Diff. Sig.	% Men	% Women	Diff. Sig.
Current Activity (Last seven days)						
Agricultural	60.67	44.06	0.0000	70.54	43.75	0.0000
Non-Agricultural	6.41	7.03	0.2426	4.89	5.22	0.5026
Casual, part-time or temporary	5.81	2.78	0.0000	1.76	0.54	0.0000
Wage	3.09	1.27	0.0000	4.04	1.06	0.0000
Any activity	67.15	49.81	0.0000	75.23	47.68	0.0000
Usual Activity (Last twelve months)						
Wage	5.27	1.88	0.0000	6.39	1.82	0.0000
Unpaid	34.82	16.24	0.0000	24.7	14.39	0.0000
PSNP	6.21	3.48	0.0000	9.35	5.27	0.0000
Casual, part-time or temporary	10.59	4.59	0.0000	4.76	1.75	0.0000
Any activity	43.9	21.11	0.0000	31.74	17.12	0.0000

Source: Based on ESS (2015-16; 2018-19)

The age-participation profile of men and women for current and usual activity status is presented in Figure 2. In the case of currently active, for both women and men, participation is already high at young ages (15-19), increases marginally at prime working age⁷ (25-54) and declines in later years of age. The age-participation profile of men and women in the case of usual activity status follows the same trend but participation is relatively lower at young ages (15-19). The inclusion of agricultural activity as part of current activity explains the high participation of young age group, 15-19 years. In rural areas, children and youngsters are active participants in household agricultural activities.

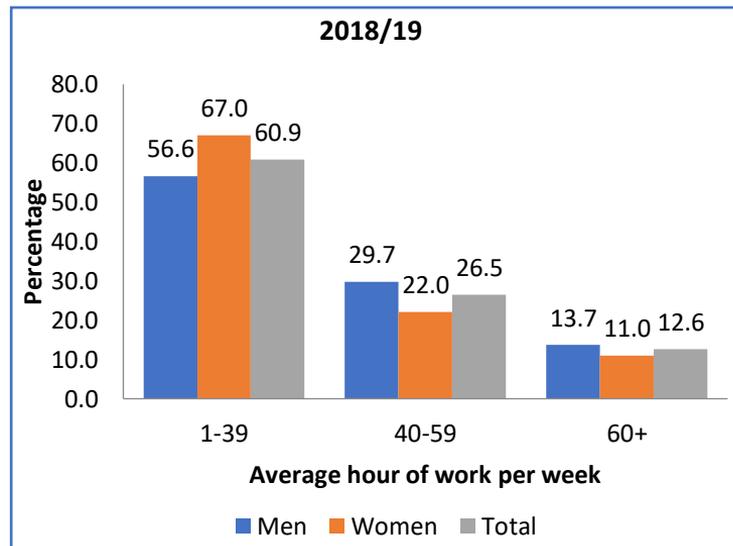
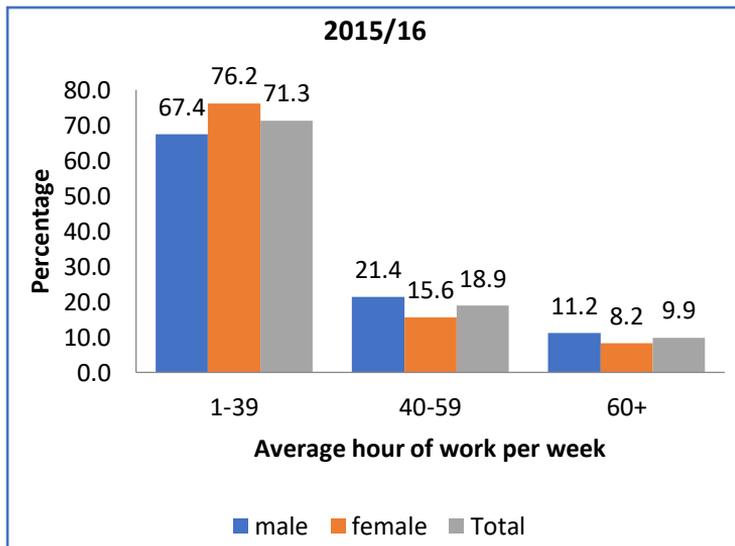
⁷ The prime working age population include adults between the ages of 25 and 54

Figure 2: The age-participation profile of men and women

Source: Based on ESS (2015-16; 2018-19)

Figure 3 shows the distribution of currently active individuals by hours of work per week. Majority 71% and 61% of the individuals in the sample work less 40 hour per week in the 2015-15 and 2018-19 survey period. Full-time employment is not very prevalent in the sample where only 33% of active women and 43% men work 40 or more hours per week in 2018-19. Compared to 2015/16, the percentage of individuals working 40 and more hours per week show increment in 2018/19.

Figure 3: Hour work per week, 2018-19 (current activity)



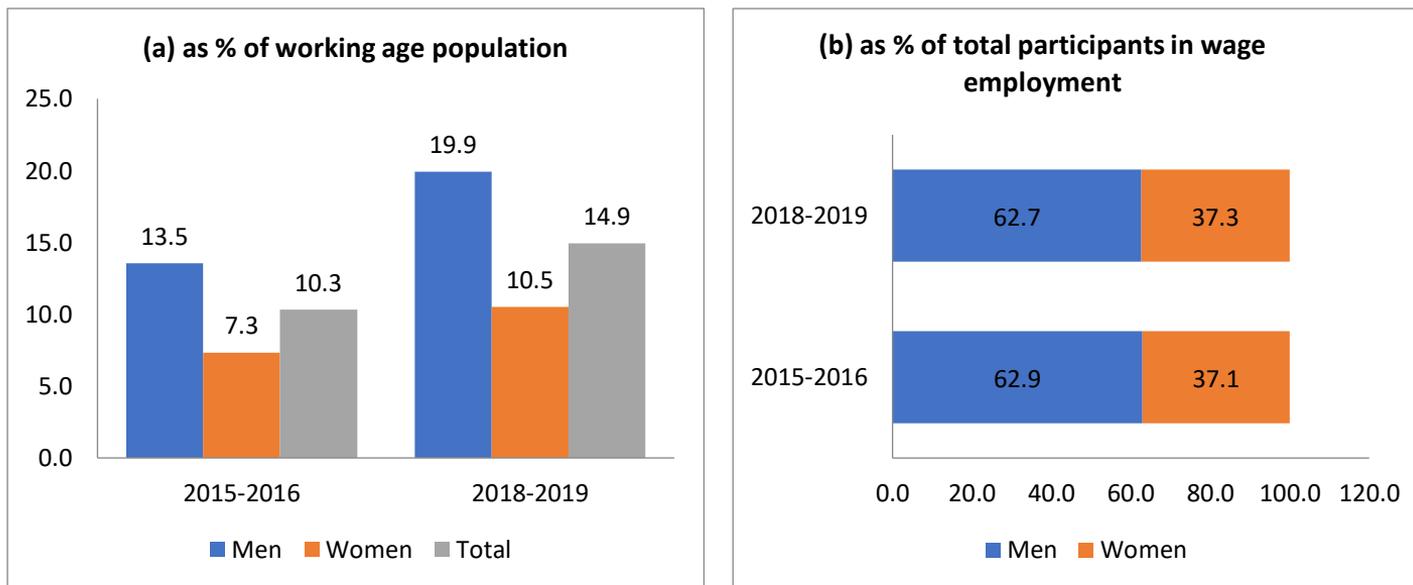
Source: Based on ESS (2015-16; 2018-19)

5.4 Participation in wage and self-employment

5.4.1 *Participation in Wage Employment*

Due to the continued dominance of agriculture as the main livelihood for majority of the population, in Ethiopia, the rate of wage employment is limited. Among working age individuals in the sample, only 15% (2533 individuals) participated in wage employment in 2018-19 showing slight increment from 10% in 2016. The percentage of women participated in wage employment is almost less than by half compared to men in both rounds of the survey. Among those who participated in wage employment, women account only 37%.

Figure 4: Participants in wage employment



Source: Based on ESS (2015-16; 2018-19)

The average age of participants in wage employment is 33 years and women participants are on average four years younger than their men counterparts. Majority (73%) of the male wage employees are household heads which is much higher than that of 35% of women. The percentage of married women participants is 42% which is lower than married men participants. The percentage of women participants in wage employment who are single, divorced, separated or widowed is higher than men participants. Close to 50% of wage employees have either primary or secondary education only. Compared to men, larger percentage of women have diploma as their highest degree while for first and graduate degree, the percentage of men is higher. Such gender disparity in education achievement often hinders women from securing top position jobs that also offer better pays.

Table 8: Characteristics of participants in wage employment (2018-19)

Characteristics	Wage Employment		
	Men	Women	Total
Age (Mean)	35	31	33
Household head (%)	72.80	34.92	58.67
Family size (Mean)	4.2	4.0	4.1
Religion (%)			
Christian	73.61	80.21	76.08
Muslim	25.82	19.26	23.37
Others	0.57	0.53	0.55
Marital status (%)			
Single	29.66	36.61	32.25
Married	66.81	42.01	57.56
Divorced, Separated, Widowed	3.53	21.38	10.19
Education (%)			
Not Educated	10.83	16.93	13.11
Informal education	0.38	0.21	0.32
Primary Education	24.81	26.03	25.27
Secondary Education	23.8	19.26	22.11
Tertiary (Certificate)	3.97	3.39	3.75
Tertiary (Not completed)	2.27	3.28	2.65
Tertiary (Diploma)	11.08	14.18	12.24
Tertiary (First degree)	18.2	14.18	16.7
Tertiary (Graduate degree)	4.66	2.54	3.87

Source: Based on ESS (2015-16)

About 61% of wage employees have below tertiary education which is an indication that elementary and non-professional occupations comprises significant share (67%) of the wage employment in the sample. The percentage of legislators, senior government officials and managers in the sample is generally low in which women engaged in such type of occupation is 50% less than men whereas women involvement in elementary occupations is 15 percentage point higher than men. Hence, women have less overall participation in wage employment and those who participate tend to concentrate in elementary and service-related jobs. Higher representation of women in elementary and service-related jobs indicates that wage employment is not necessary empowering for women. Women who are engaged in elementary and low paying service jobs often work out of distress to support themselves and families than by choice. Regarding this, Klasen et al., (2019) indicated that in most poor and developing countries where economic growth is in short of creating adequate decent jobs, women usually participate in the labor force out of distress. Their study also found that in such economies, women often leave the labor market as soon as it is affordable to do so.

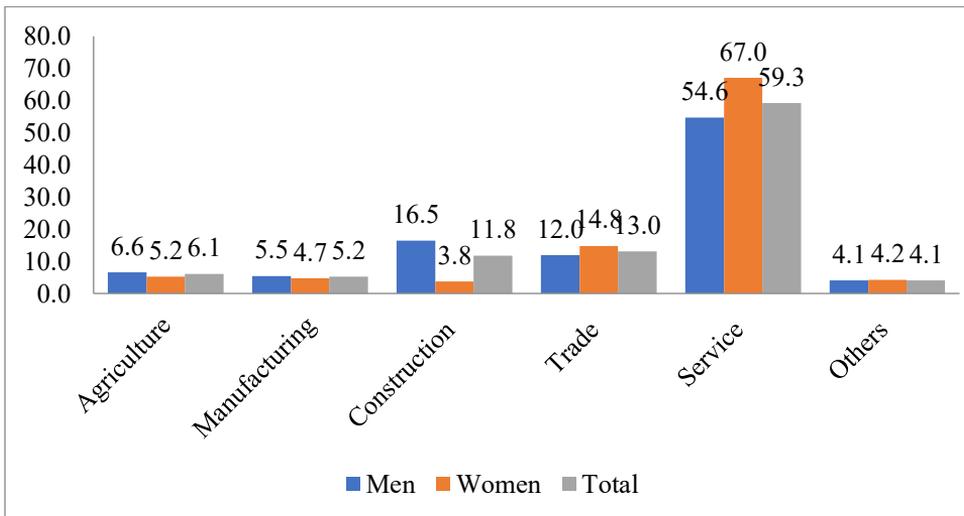
Table 9: Types of occupations (2018-19)

Types Occupations	Men (%)	Women (%)	Total (%)
Legislators, senior government officials and managers	3.91	1.8	3.12
Professionals/Science professional	27.73	25.19	26.78
Technicians and associate profession	3.59	2.65	3.24
Clerks, office clerks	1.76	7.94	4.07
Service workers, and shop and market	17.52	18.94	18.05
Skilled agricultural and fishery workers	4.79	3.81	4.42
Craft and related trades workers	17.39	4.13	12.44
Plant and machine operators and assemblers	0.95	0.32	0.71
Elementary occupations, sales, and service	19.47	33.86	24.84
Army/ member of the armed forces	2.71	1.16	2.13

Source: Based on ESS (2018-19)

The service sector dominates participation in wage employment where 59% of participants work in the sector. Women comprises relatively higher share of participants in the service and the trade sector while men dominate the construction sector compared to women. Existing social norms, unsuitable working environment at construction sites and lack of adequate knowledge about the sector are usually the main reasons for lower participation of women in the construction sector compared to men. Gender-based discrimination in pay is also noticed in the sector where women daily laborers are often paid less compared to men. Such discrimination together with work place harassments are discouraging for women to actively participate in the construction sector.

Figure 5: Sector of participation in wage employment (2018-19)



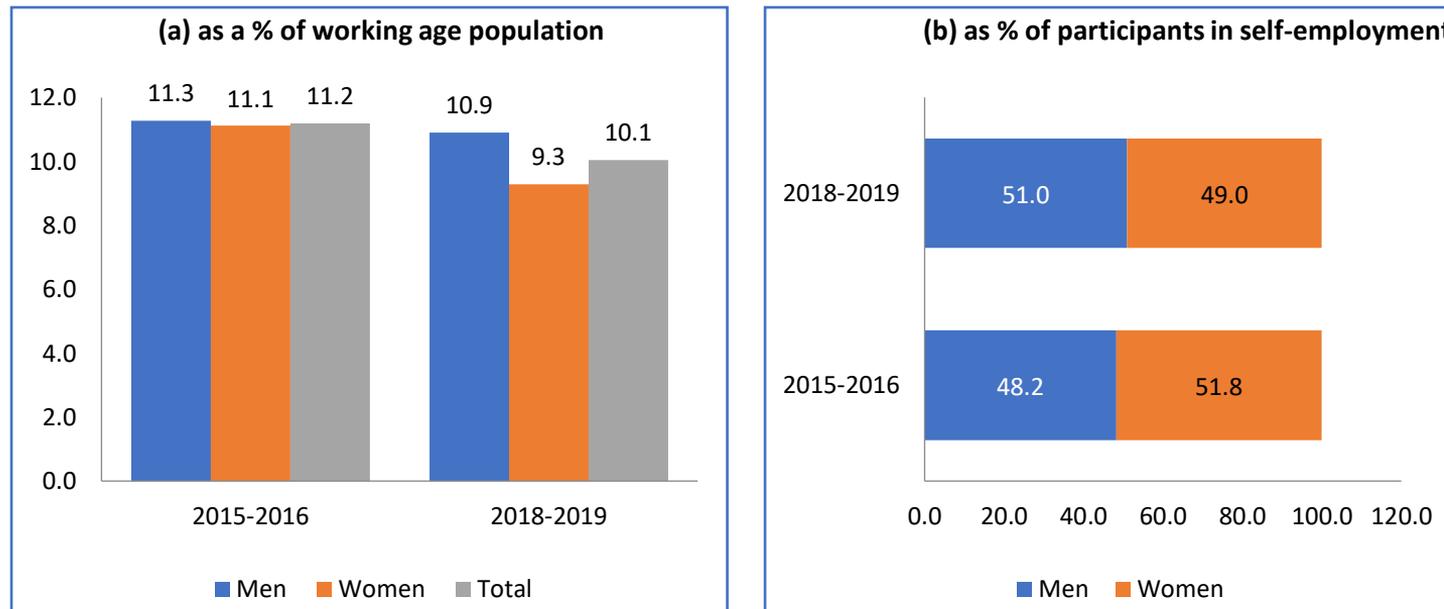
Source: Based on ESS (2018-19)

Note: The service sector includes hotels and restaurants, transport, financial intermediation, public administration, education, health and social services, and other services

5.4.2 Participation in self-employment

Similar to wage employment, the percentage of individuals engaged in self-employment which are mainly non-agricultural household business activities are also limited. In 2018-19, only 10% of working age individuals own non-farm enterprises which is almost the same with the percentage in 2015-16. There is no significant gender disparity in ownership of non-farm enterprises.

Figure 6: Participants in self-employment



Source: Based on ESS (2015-16; 2018-19)

The average age of self-employed individuals is 36 where women non-farm enterprise owners are on average one year younger than their men counterparts. 87% and 51% of men and women non-farm enterprise owners are household heads respectively. The average family size of non-farm enterprise owners is 4 where the majorities (67%) of them are married. The education status of non-farm enterprise owners is low where 30% of them are illiterate while 36% of them have only primary education. Significantly higher percentage of self-employed women has no education compared to men. The percentage of non-farm enterprise owners with tertiary education is 11%. The percentage of men entrepreneurs with tertiary education stand at 15% which is significantly higher than women (9%).

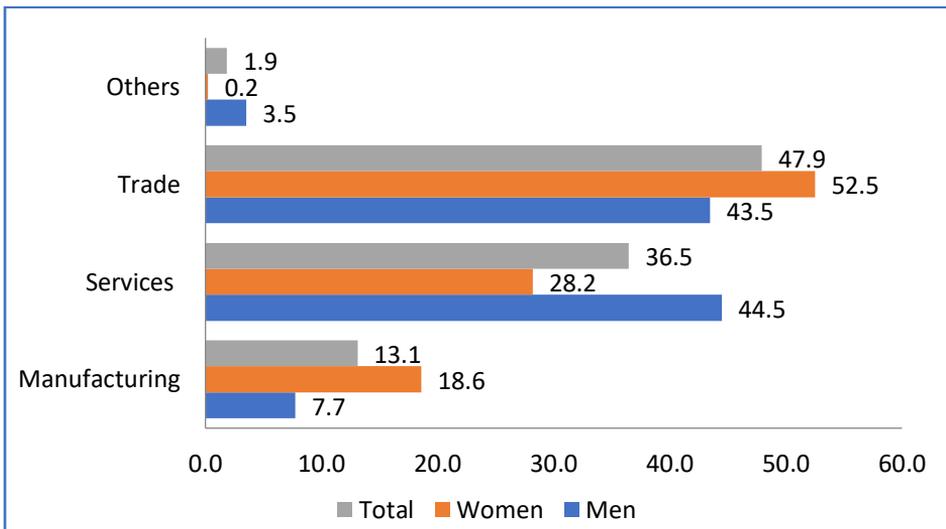
Table 10: Characteristics of participants in self-employment (2018-19)

Characteristics	Self-employment		
	Men	Women	Total
Age (Mean)	37	36	36
Household head (%)	87.46	51.02	69.60
Family Size (Mean)	4.6	4.3	4.4
Religion (%)			
Christian	67.43	70.9	69.13
Muslim	32.22	28.62	30.46
Others	0.35	0.48	0.41
Marital status (%)			
Single	16.8	11.14	14.03
Married	79.06	54.73	67.14
Divorced, Separated, Widowed	4.14	34.13	18.84
Education (%)			
Not Educated	19.91	42.28	30.87
Informal education	1.15	1.32	1.23
Primary Education	39.93	32.69	36.38
Secondary Education	24.17	15.21	19.78
Tertiary (Certificate)	2.19	1.68	1.94
Tertiary (Not complete)	1.04	0.96	1
Tertiary (Diploma)	4.6	3.95	4.28
Tertiary (First degree)	5.41	1.44	3.46
Tertiary (Graduate degree)	1.61	0.48	1.06

Source: Based on ESS (2018-19)

The larger 48% of non-farm enterprise owners' work in trade sectors followed by service (37%) and manufacturing sector (13%). The share of women entrepreneurs working in trade, service and manufacturing sector are 53%, 28% and 19% respectively while men non-farm enterprise owners working in the respective sectors are 44%, 45% and 8%. Close to half of the non-farm enterprise owners work in the retail trade, women accounting 55% and men the remaining 45%.

Figure 7: Non-farm enterprises by sector (2018-19)



Source: Based on ESS (2018-19)

About 40% of men owned enterprises have business license while the percentage of licensed business owned by women are only 20%. This shows that women tend to engage more in informal businesses. Women owned entrepreneurs on average hired three workers less than their men counterparts. This may indicate that women owned enterprises are smaller in size, create fewer jobs and possess less growth potential. The average monthly sale of women non-farm enterprise owners is also only 31% of that of men. The average total operating cost of women owned enterprises is also by far low (61% less) compared to men entrepreneurs which might be an indication that women own smaller enterprises relative to men. In general, even there is no significant gender disparity in ownership of non-farm enterprises; women owned enterprises seem to perform

less in terms of business legalization, sales, number of hired workers and firm size.

Table 11: Characteristics of Men’s and Women’s Enterprises (2018-19)

Attributes	Men	Women	Total
% of licensed enterprises	40	20	30
Number of Hired workers	4	1	2
Average monthly sales (in Birr)*	15,075.3	4,719.0	99,71.8
Average monthly operating cost (total in Birr)*	21,295.3	8,302.5	14,892.5

Source: Based on ESS (2018-19)

* The self-reported average monthly operating cost is greater than the average monthly sales. The actual figures thus should be taken with caution and may not necessarily imply loss. The numbers are only considered to show the sales and operating cost gap between in men and women enterprise owners.

6. Factors associated with labor force participation

The analysis in this section is based on the fourth round of ESS data (2018-19). The description of explanatory variables (individual, household, geographical, job and enterprise related factor) included in various model specifications is given in Table 12 below.

Table 12: Definitions of Variables included in the Estimation Models

Variables	Description
Individual level factors	
Female	Dummy=1 if female
Age	Age in years
Age square	Square of age
Education	Dummy=1 if individual have certificate and above level of education
Religion (base category = Christian)	1 = Muslim, 2 = Others (traditional and pagan)
Marital status	Dummy =1 if individual is a married, 0 otherwise
Household head status	Dummy =1 if individual is a household head, 0 otherwise
Illness/Injury	Dummy =1 if individual faced health problem (illness or injury) within a month time
Household level factors	
Family size	Number of household members
Children under 5 years	Dummy=1 if there are children aged 5 years and below in the household
Dependency ratio	Household dependency ratio
Wealth index	Household wealth constructed based asset of the household members
Non-labor income	Household total income from various non-labor sources
Formal loan	Dummy=1 if the household received formal loan
Job related factors	
Types of occupation (base category = Legislators, senior government officials and managers)	1. Legislators, senior government officials and managers 2. Professionals/Science professional 3. Technicians and associate profession 4. Clerks, office clerks

Variables	Description
	5. Service workers and shop and market
	6. Skilled agricultural and fishery workers
	7. Craft and related trades workers
	8. Plant and machine operators and assemblers
	9. Elementary occupations, sales and service
	10. Member of the armed forces
Geographical factors	
Residence	Dummy =1 if an individual lives in rural area and 0 otherwise
Enterprise related factors	
Licensed enterprise	Dummy=1 if the non-farm enterprise has business license
Hired workers	Number of workers hired by the non-farm enterprise
Total cost	Total operating cost of the non-farm enterprise
Seasonal activity	Dummy=1 if the enterprise's activity is seasonal

6.1 Participation in the labor force and hour of work

In this section factors which associate with men's and women's decision to work and how much to work are investigated. Participation in the labor market is defined based on current activity status. Table 13 presents estimation results from the pooled sample which includes both men and women observations and gender dummy is included as explanatory variable to see the gender gap in decision to work and how much to work. The results show that women have 17% less participation in the labor force and work 8 hour less compared to men controlling for individual and household characteristics. This result is similar with previous study which found that women in Ethiopia generally show less participation in the labor market and those who participate work less hour compared to men (World Bank, 2019). Age, education, religion, marital status, and household headship are also factors which significantly associate with individual's decisions to work and how much to work. In particular, individuals with certificate and above education level have 9% more chance of participation in the labor market and work 4 hours more compared to those with education below certificate. The effect of education on decision to work and how much to work is more pronounced among women sample as women with certificate and above education level are more likely to participate and work additional hours than their male counter parts.

Married individuals have higher participation in the labor market (3%) and work 2 hours more. However, being a married woman is associated with less chance of participation in the labor market and less working hours. Marriage often brings additional household responsibilities for women which curtail her time that can be allocated to income generating economic activities outside of home. Household heads are 13% more likely to participate in the labor market and work 11 hours more compared to other members of the household. Having more family size and children aged below five are associated with less and more working hours respectively. Individuals in wealthier households also show more participation in the labor market and work more hours whereas individuals in households with more non-labor income show less participation in the labor market and work fewer hours.

Table 13: Participation and hour of work in current activity (pooled sample – Men and Women)

Variables	Probit		Tobit		Probit with interaction	Tobit with interaction
	(1) Participation (Coeff.)	(2) Participation (Margins)	(4) Hour of work (Coeff.)	(5) Hour of work (Margins)	(6) Participation (Coeff.)	(7) Hour of work (Coeff.)
Female	-0.500*** (0.0228)	-0.171*** (0.00747)	-16.32*** (0.718)	-8.300*** (0.364)	-0.741*** (0.139)	-23.95*** (4.367)
Age	0.0582*** (0.00379)	0.0200*** (0.00127)	1.901*** (0.121)	0.967*** (0.0616)	0.0532*** (0.00564)	1.796*** (0.171)
Female and age					0.0229*** (0.00812)	0.761*** (0.257)
Age square	-0.000757*** (4.34e-05)	-0.000259*** (1.45e-05)	-0.0245*** (0.00139)	-0.0125*** (0.000707)	-0.000693*** (6.04e-05)	-0.0225*** (0.00185)
Female and age square					-0.000298*** (9.39e-05)	-0.0111*** (0.00301)
Above Certificate	0.268*** (0.0357)	0.0920*** (0.0122)	8.135*** (1.088)	4.138*** (0.553)	0.166*** (0.0477)	4.848*** (1.406)
Female and above certificate					0.264*** (0.0713)	9.237*** (2.198)
Religion (Base = Christian)						
Muslim	-0.211*** (0.0284)	-0.0726*** (0.00972)	-5.462*** (0.882)	-2.744*** (0.437)	-0.212*** (0.0285)	-5.431*** (0.879)
Others	-0.215* (0.115)	-0.0738* (0.0394)	-3.314 (3.565)	-1.700 (1.773)	-0.222* (0.116)	-3.394 (3.554)

Married	0.104*** (0.0259)	0.0357*** (0.00886)	2.202*** (0.814)	1.120*** (0.414)	0.283*** (0.0513)	7.197*** (1.521)
Female and married					-0.327*** (0.0631)	-10.44*** (1.933)
Household head	0.386*** (0.0281)	0.132*** (0.00947)	11.65*** (0.876)	5.926*** (0.444)	0.298*** (0.0509)	8.093*** (1.538)
Female household head					-0.0298 (0.0662)	-0.154 (2.060)
Family size	0.00198 (0.00522)	0.000678 (0.00179)	-0.325** (0.163)	-0.165** (0.0830)	0.00115 (0.00777)	-0.515** (0.229)
Female and family size					-0.00949 (0.0104)	-0.0536 (0.322)
Children under 5 years	0.0323 (0.0261)	0.0111 (0.00895)	1.901** (0.809)	0.967** (0.412)	0.0658* (0.0400)	2.407** (1.151)
Female and children aged less than 5					-0.0633 (0.0527)	-0.970 (1.608)
Dependency ratio	0.00538 (0.0169)	0.00184 (0.00578)	-0.130 (0.522)	-0.0661 (0.265)	0.00930 (0.0278)	0.180 (0.792)
Female and dependency Ratio					0.00627 (0.0349)	-0.248 (1.045)
Wealth index	0.000370 (0.00236)	0.000127 (0.000809)	0.329*** (0.0744)	0.167*** (0.0379)	-0.00971*** (0.00299)	0.148 (0.0916)
Female and wealth index					0.0158*** (0.00336)	0.246** (0.105)

Non-labor income	-0.00364 (0.00263)	-0.00125 (0.000902)	-0.343*** (0.0819)	-0.174*** (0.0417)	-0.00325 (0.00395)	-0.421*** (0.116)
Female and non-labor Income					-0.000208 (0.00529)	0.169 (0.163)
Formal loan	0.155 (0.0953)	0.0533 (0.0327)	2.421 (2.752)	1.232 (1.400)	0.309** (0.148)	4.058 (3.722)
Female and formal loan					-0.275 (0.194)	-3.380 (5.462)
Illness/Injury	0.0410 (0.0568)	0.0141 (0.0195)	0.689 (1.731)	0.350 (0.881)	-0.00745 (0.0920)	-0.896 (2.561)
Female and Illness/Injury					0.0881 (0.117)	3.153 (3.461)
Rural	0.614*** (0.0269)	0.210*** (0.00882)	11.51*** (0.847)	5.857*** (0.429)	0.613*** (0.0271)	11.34*** (0.845)
Regional Dummy	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.306*** (0.0760)		-33.51*** (2.432)		-1.235*** (0.106)	-31.68*** (3.216)
Observations	16,799	16,799	16,799	16,799	16,799	16,799

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 14 presents estimation results from the women only sample. Women's age, education and household headship show significant positive association with both participation in the labor market and hour of work. Women with certificate and above education level are 15% more likely to participate in the labor market and work 5 hour more than women with no such education. Previous studies show that the positive effect of education on women employment comes through increased chance of getting a better and well-paying job, higher opportunity cost of not working (Khanie, 2019; Psacharopoulos & Tzannatos, 1989), and reduced fertility rate (Lam & Duryea, 1999; Mujahid, 2014; Sackey, 2005; Bbaale, 2014). Women household heads are also 8% more likely to participate in the labor market and work 3 hour more. Having more family size and being a married woman are associated with less hour of work while women from relatively wealthier household work more hours. Marriage is often followed by childbearing and increased household chores and responsibilities for woman which reduces her time for economic activities outside of home leading to her to decide not to work or dropout from the labor market if she is already a working woman. Similarly, women with large family size might be face with huge burden of domestic activities (i.e. taking caring of family members especially children and the elderly).

Table 14: Participation and hour of work in current activity (women only sample)

VARIABLES	Probit		Tobit	
	(1) Participation (Coeff.)	(2) Participation (margins)	(3) Hour of work (Coeff.)	(4) Hour of work (Margins)
Age	0.0764*** (0.00585)	0.0272*** (0.00203)	2.736*** (0.213)	1.087*** (0.0848)
Age squared	-0.000985*** (7.19e-05)	-0.000351*** (2.49e-05)	-0.0359*** (0.00263)	-0.0143*** (0.00105)
Certificate and above	0.423*** (0.0533)	0.151*** (0.0188)	14.83*** (1.871)	5.895*** (0.743)
Religion (Base = Christian)				
Muslim	-0.217*** (0.0387)	-0.0773*** (0.0136)	-6.684*** (1.393)	-2.603*** (0.531)
others	-0.0955 (0.163)	-0.0345 (0.0581)	-2.263 (5.795)	-0.927 (2.315)
Married	-0.0504 (0.0369)	-0.0180 (0.0132)	-3.573*** (1.322)	-1.420*** (0.526)
Household head	0.245*** (0.0425)	0.0875*** (0.0151)	8.282*** (1.513)	3.291*** (0.601)
Family size	-0.00730 (0.00715)	-0.00260 (0.00255)	-0.606** (0.258)	-0.241** (0.103)
Children aged less than 5	0.00761 (0.0347)	0.00271 (0.0124)	1.597 (1.248)	0.634 (0.496)
Dependency ratio	0.0169 (0.0215)	0.00604 (0.00767)	-0.0605 (0.763)	-0.0241 (0.303)
Wealth index	0.00119 (0.00322)	0.000426 (0.00115)	0.372*** (0.116)	0.148*** (0.0460)
Non-labor income	-0.00286 (0.00354)	-0.00102 (0.00126)	-0.247* (0.127)	-0.0981* (0.0503)
Formal loan	0.0820 (0.127)	0.0293 (0.0453)	1.964 (4.442)	0.781 (1.765)
Illness/Injury	0.0929 (0.0723)	0.0331 (0.0258)	2.506 (2.562)	0.996 (1.018)
Rural	0.505*** (0.0369)	0.180*** (0.0128)	12.64*** (1.343)	5.021*** (0.532)
Regional dummy	Yes	Yes	Yes	Yes
Constant	-1.944*** (0.109)		-63.61*** (4.028)	
Observations	8,874	8,874	8,874	8,874

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

6.2 Participation in wage employment

This section analyzes factors which affect men and women's participation in wage employment. Table 15 reports results from Heckman selection model. Column 1, 2 and 3 illustrates estimated coefficients from the outcome (wage) equation, coefficients of the selection equation and average marginal effects from the selection equation respectively for model with no female interaction terms. Column 4-5 show the same results for model with female interaction terms.⁸ Results from the pooled sample show that there is a sample selection problem in estimating the wage equation given that the coefficient on Heckman lambda is significant. Similar to overall participation in the labor market, women have significantly less participation in wage employment compared to men controlling for education and, other individual and household characteristics. In particular, the participation of women in wage employment is 12% lower than men. Women also receive 43% less wage than men while controlling for age (proxy for experience), education and type of occupation. Additional factors which significantly associate with both women's and men's participation in wage employment include age, education, religion, marital status, household head status, family size, having children aged less than five years in the household, wealth, non-labor income and residence.

The age of an individual is positively associated with participation in wage employment up to the age of 38 years. Every additional one year of age is associated with 2.5% higher chance of participation in the wage employment in primary working age years. Education is also positively associated with participation in wage employment where individuals with certificate and above level of education are 23.8% more likely to participate in the wage employment and earn 25 percent more wage than individuals with no tertiary education. Household heads, individuals from wealthier households and with children under five years also more likely to participate in wage employment. Being married, Muslim, living in rural areas, and having large family size and non-labor income are associated with lower probability of participation in paid employment. Compared to their male counterparts, married women show less participation

⁸ Only coefficients of significant interaction terms are reported in the table

while women from wealthier households are more likely to participate in wage employment. The negative impact of marriage on wage employment of women than men is associated with the social norms and traditional role of women in Ethiopia where while married men is expected to be breadwinner and hence have to work outside home while women is seen as homemaker responsible for running the household and caring for children and others household members (Tumsarp & Pholphirul, 2020). Results from the wage equation show that in addition to education, age which is included as a proxy for experience is also significantly associated with wage controlling for types of occupations. Every additional year of age (experience) is associated with 4.8% increase in wage until the age of 45 years.

Table 15: Participation in wage employment (Heckman Selection Model, pooled sample)

Variables	With no interaction			With interaction		
	(1) Logarithm of Hourly Wage	(2) Participation (coefficients)	(3) Participation (margins)	(4) Logarithm of Hourly Wage	(5) Participation (coefficients)	(6) Participation (margins)
Female	-0.430*** (0.0419)	-0.411*** (0.0308)	-0.126*** (0.00933)	-0.544 (0.342)	-0.112 (0.231)	-0.0348 (0.0714)
Age	0.0480*** (0.00950)	0.0831*** (0.00636)	0.0254*** (0.00194)	0.0508*** (0.0117)	0.0963*** (0.00859)	0.0298*** (0.00266)
Age square	- 0.000526*** (0.000120)	- -0.00108*** (7.78e-05)	- 0.000330*** (2.38e-05)	- 0.000544*** (0.000142)	- -0.00117*** (0.000100)	- 0.000362*** (3.11e-05)
Certificate and Above	0.258*** (0.0608)	0.777*** (0.0367)	0.238*** (0.0104)	0.161** (0.0654)	0.742*** (0.0481)	0.230*** (0.0141)
Religion (Base=Christian)						
Muslim		-0.259*** (0.0384)	-0.0781*** (0.0114)		-0.258*** (0.0386)	-0.0789*** (0.0116)
Others		-0.180 (0.198)	-0.0550 (0.0588)		-0.151 (0.197)	-0.0471 (0.0600)
Married		-0.137*** (0.0347)	-0.0421*** (0.0106)		0.0307 (0.0595)	0.00952 (0.0184)

Household head	0.315***	0.0964***	0.152**	0.0471**
	(0.0371)	(0.0113)	(0.0597)	(0.0185)
Family size	-0.0693***	-0.0212***	-0.0840***	-0.0260***
	(0.00796)	(0.00242)	(0.0106)	(0.00328)
Children under 5	0.127***	0.0390***	0.151***	0.0468***
Years	(0.0361)	(0.0111)	(0.0498)	(0.0154)
Dependency ratio	-0.0239	-0.00731	-0.0290	-0.00899
	(0.0267)	(0.00816)	(0.0384)	(0.0119)
Wealth index	0.0118***	0.00362***	0.00451	0.00140
	(0.00277)	(0.000848)	(0.00344)	(0.00106)
Non-labor income	-0.0118***	-0.00362***	-0.0108**	-0.00335**
	(0.00353)	(0.00108)	(0.00485)	(0.00150)
Formal credit	-0.0780	-0.0239	-0.137	-0.0424
	(0.132)	(0.0405)	(0.173)	(0.0537)
Health problem	-0.0543	-0.0166	-0.270**	-0.0835**
	(0.0868)	(0.0265)	(0.126)	(0.0392)
Rural	-0.686***	-0.210***	-0.702***	-0.218***
	(0.0394)	(0.0123)	(0.0402)	(0.0127)
Occupation3(a)	0.288**		0.288**	
	(0.127)		(0.126)	
Occupation8	0.354***		0.344***	
	(0.131)		(0.130)	

Occupation10	-0.321**			-0.301**		
	(0.127)			(0.126)		
Lambda		-0.175***			-0.156***	
		(0.0550)			(0.0543)	
Female and, certificate and above			0.337***		0.102	0.0315
			(0.0813)		(0.0740)	(0.0230)
Female and Married					-0.394***	-0.122***
					(0.0796)	(0.0247)
Female and Wealth Index					0.0119***	0.00369***
					(0.00420)	(0.00130)
Female and, Illness/Injury					0.425**	0.132**
					(0.174)	(0.0540)
Regional dummy		Yes	Yes		Yes	Yes
Constant	2.210***	-2.078***		2.150***	-2.292***	
	(0.248)	(0.122)		(0.292)	(0.159)	
Observations	16,773	16,773	2,506	16,773	16,773	2,506

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Note: (a) only occupations which significantly affect wage are reported in the table

Looking into the women only sample, women's participation and wage is significantly associated with age, education, religion, marital status, household headship, family size, the existence of children under five years in the household, wealth, non-labor income and residence.⁹ Women's additional years of age is associated with 2.6% higher chance of participation in wage employment and 6% higher wage in primary working years of age respectively. Women having certificate and above education also have 24.4% higher chance of participation and earn 51% higher wage than women with no such education. To further assess the relevance of education for women's participation in wage employment, a separate analysis using categorical education variable is conducted and the results are presented in the Appendix, Table A. The results show that compared to women with primary education, having tertiary education specifically diploma, first degree and graduate degree matters more for women to participate in wage employment and earn higher wage. The importance of having tertiary education for women participation in wage employment is also established by previous studies (see Cameron et al., 2001; Ince, 2010; Khanie, 2019; Wainerman, 1980). Though education in general is important in enhancing women participation in labor force, it should go beyond primary and secondary education if women are to access paid jobs. However, given the current status of women education in Ethiopia is low; a short-term policy action should focus on creating job opportunities that takes it to account the current education level of women in the country.

⁹ The estimation on the women's only sample show no evidence of a sample selection problem in estimating the wage equation given that the coefficient on the Hackman lambda is insignificant.

Table 16: Participation in wage employment (Heckman Selection Model, Women only sample)

Variables	(1) Logarithm of hourly wage	(2) Participation (coeff.)	(3) Participation (margins)
Age	0.0593*** (0.0143)	0.0904*** (0.0107)	0.0262*** (0.00310)
Age squared	-0.000732*** (0.000195)	-0.00126*** (0.000140)	- (4.08e-05)
Certificate and above	0.510*** (0.0895)	0.842*** (0.0569)	0.244*** (0.0157)
Religion (Base=Christian)			
Muslim		-0.200*** (0.0587)	-0.0564*** (0.0161)
Others		-0.255 (0.340)	-0.0708 (0.0882)
Married		-0.361*** (0.0533)	-0.104*** (0.0155)
Household head		0.217*** (0.0612)	0.0627*** (0.0177)
Family size		-0.0746*** (0.0125)	-0.0216*** (0.00364)
Children under 5 years		0.0902* (0.0539)	0.0261* (0.0156)
Dependency ratio		-0.00784 (0.0384)	-0.00227 (0.0111)
Wealth index		0.0159*** (0.00409)	0.00462*** (0.00118)
Non-labor income		-0.0122** (0.00523)	-0.00353** (0.00151)
Formal loan		0.0320 (0.203)	0.00925 (0.0589)
Illness/Injury		0.149 (0.120)	0.0432 (0.0348)
Rural		-0.671*** (0.0676)	-0.194*** (0.0201)
Occupation10(a)	-0.373* (0.218)		
Regional dummy lambda		Yes 0.00791 (0.0714)	Yes
Constant	1.316*** (0.356)	-2.531*** (0.193)	
Observations	8,859	8,859	930

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: (a) only occupations which significantly affect wage are reported in the table

Marital status, residence, family size and non-labor income are factors which associate with less participation of women in wage employment. Previous studies found that marriage (especially early marriage) reduces educational attainment and literacy of women leading to less chance of securing wage employment (Field et al., 2018; Mariara et al., 2018). Women living in rural areas also show less participation. In rural areas of most developing countries, agriculture is the dominant economic activity and wage employment is scarce. The situation is not different in Ethiopia where women in rural areas of the country face both demand and supply side labor market constrain to participate in wage employment. Rural women have less education attainment and access to wage employment than those living in urban areas. Large family size is often associated with increased burden of household works and responsibilities for women which leads of less chance of participation in paid work outside of home. Having more non-labor household income reduces the pressure to work as long as the family income need is satisfied with non-labor income sources (see (Psacharopoulos & Tzannatos, 1989). Household headship and wealth are factors which positively associate with women's participation in wage employment.

6.3 Participation in self-employment

This section assesses gender gap in self-employment and factors which associate with men's and women's decision of owning non-farm enterprises. The section will also identify existing gender gap in business sales and factors which explain such gaps. Table 17 presents estimation results on factors affecting participation in self-employment and sales of non-farm enterprises. When it comes to self-employment (ownership of non-farm business), women have 2.2% higher chance participation than men controlling for various individual and household characteristics. Women entrepreneurs however make 54.4% less average monthly sale than their men counterparts. This is could be due to the small size of women enterprises compared to their men counterparts as indicated by the significantly lower operating cost (see Table 11). Previous studies in Ethiopia also show that women entrepreneurs face various impediments in expanding business sales where most women sell their products and services in local markets having less access to wider and more profitable markets (Alene,

2020; Assefa & Cheru, 2018; Gebremariam, 2017; Abagissa, 2013; Solomon, 2010; Eshetu & Zeleke, 2008). In the current data, about 75% of women non-farm enterprise owners sell their products to local customer. This indicates that women entrepreneurs face limited market and business linkages where most of them transact directly with customers without much use of intermediaries limiting their prospects of networking and growth.

In the pooled sample; age, education, marital status, household headship, family size, wealth and residence are significant factors which associate with participation in self-employment. Individual's age, marital status and household wealth have significant positive association with participation in self-employment while education, family size and living in rural areas have significant negative association. In particular, individuals having certificate and above show 6% less chance of participation in self-employment. In the data, most owner of non-farm business has level education below tertiary where 30% are not educated and 57% have only primary or secondary education. A similar result is found in the women only sample where women with tertiary education are 5% less likely to participate in self-employment. Only 9.6% of women non-farm business owners have tertiary education. This shows that women with tertiary education are more likely to engage in wage employment than self-employment. The dominance of retail trade in the sample of self-employed also explains the low education profile of women entrepreneurs.

Education however is positively associated with sales of an enterprise where owners having certificate and above make 36.5% higher sales. A business sale in wealthier households is also 4% higher. Enterprises having business license make 21% higher sale than with no license. Number of hired workers and total production cost also positively associate with sales. Sale is negatively associated with the regularity of activity where enterprises with seasonal business activity show 16.2% less sales. In the women only sample, religion, household head status, family size and residence also significantly determine participation in self-employment. Muslim women and those having large family size and living in rural area have less participation while women household heads have higher participation in self-employment.

Table 17: Participation in self-employment and sales of non-farm enterprises

Variables	Pooled (Men and Women)			Women only		
	(1) Participation (Coeff.)	(2) Participation (margins)	(3) Logarithm of Sales	(4) Participation (Coeff.)	(5) Participation (margins)	(6) Logarithm of Sales
Female	0.142*** (0.0332)	0.0221*** (0.00515)	-0.544*** (0.0876)			
Age	0.0796*** (0.00650)	0.0123*** (0.00101)	0.00602 (0.0180)	0.122*** (0.00995)	0.0179*** (0.00146)	0.00730 (0.0249)
Age square	-0.0010*** (7.79e-05)	-0.00016*** (1.21e-05)	-0.00026 (0.000217)	-0.00153*** (0.000126)	-0.00022*** (1.85e-05)	-0.00028 (0.000314)
Certificate and above	-0.432*** (0.0480)	-0.0670*** (0.00745)	0.365*** (0.130)	-0.353*** (0.0763)	-0.0515*** (0.0112)	0.272 (0.205)
Religion (Base=Christian)						
Muslim	-0.00387 (0.0383)	-0.000601 (0.00594)	0.330*** (0.0939)	-0.118** (0.0556)	-0.0169** (0.00782)	0.514*** (0.131)
Others	-0.252 (0.203)	-0.0340 (0.0236)	-0.533 (0.586)	-0.363 (0.294)	-0.0451 (0.0288)	-0.955 (0.682)
Married	0.0989*** (0.0356)	0.0153*** (0.00552)	0.119 (0.0909)	0.0681 (0.0511)	0.00995 (0.00746)	0.170 (0.126)
Household head	0.690*** (0.0387)	0.107*** (0.00599)	0.122 (0.0988)	0.679*** (0.0549)	0.0992*** (0.00799)	0.0754 (0.132)
Family size	-0.0293*** (0.00790)	-0.00454*** (0.00123)	0.0237 (0.0204)	-0.0312*** (0.0111)	-0.00456*** (0.00163)	0.0309 (0.0276)
Children under 5 years	0.0191 (0.0366)	0.00297 (0.00568)	-0.0659 (0.0932)	0.0271 (0.0507)	0.00395 (0.00742)	-0.188 (0.121)

Dependency ratio	0.0165 (0.0236)	0.00256 (0.00367)	-0.0262 (0.0583)	-8.97e-05 (0.0304)	-1.31e-05 (0.00445)	-0.0460 (0.0726)
Wealth index	0.0172*** (0.00300)	0.00267*** (0.000466)	0.0420*** (0.00790)	0.00555 (0.00423)	0.000811 (0.000619)	0.0385*** (0.0104)
Non-labor income	-0.00279 (0.00366)	-0.000433 (0.000567)	0.0149 (0.00931)	-0.00265 (0.00506)	-0.000388 (0.000739)	0.00249 (0.0121)
Formal loan	0.178 (0.117)	0.0276 (0.0182)	0.146 (0.266)	0.206 (0.168)	0.0301 (0.0245)	0.169 (0.368)
Illness/Injury	0.0710 (0.0771)	0.0110 (0.0120)	-0.225 (0.188)	0.0193 (0.104)	0.00282 (0.0152)	-0.0755 (0.240)
Licensed enterprise			0.215** (0.0972)			0.0995 (0.142)
Seasonal activity			-0.162** (0.0807)			-0.363*** (0.109)
Hired workers			0.00277*** (0.000713)			0.00290 (0.0148)
Log total cost			0.179*** (0.0126)			0.218*** (0.0184)
Rural	-0.467*** (0.0374)	-0.0724*** (0.00580)	-0.546*** (0.0960)	-0.375*** (0.0521)	-0.0548*** (0.00763)	-0.560*** (0.122)
Regional dummy	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-2.710*** (0.124)		6.315*** (0.354)	-3.264*** (0.181)		5.521*** (0.498)
Observations	16,822	16,822	1,601	8,889	8,889	807
R-squared			0.403			0.421

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

6.4 Decomposing and explaining the wage and sales gap

Results from the Blinder-Oaxaca decomposition analysis are presented in Tables 18 and 19. The unconditional wage gap between men and women is estimated to be 62.7%. The Blinder-Oaxaca decomposition analysis indicated that 26.2% of the gender wage gap is explained by the variables included in the model where the largest share of 73.8% remained unexplained. The decomposition model divides group differences in outcome variable into a part that is explained by differences in observed characteristics between genders (i.e., different levels of endowments) and a residual part that cannot be accounted for by observed predictors. The group differences attributable to different means of observed characteristics between groups are generally called the part of the wage gap that is “explained,” while the residual difference is referred as the part that is “unexplained.” Assuming there are no unobserved predictors in the model, the “unexplained” part is often used as a measure for discrimination.

Table 18: Wage gap decomposition

Variables	(1) Differential	(2) Decomposition
Mean log wage (Men)	3.180*** (0.0261)	
Mean log wage (Women)	2.553*** (0.0302)	
Difference	0.627*** (0.0399)	
Explained		0.164*** (0.0299)
Unexplained		0.463*** (0.0441)
Observations	2,506	2,506

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

In order to evaluate how much of the explained and unexplained gender pay gap is attributed to which explanatory variable, a detailed decomposition analysis is conducted, and results are reported in Table 19. Only coefficients of variables which significantly account for the explained and unexplained wage gap are reported. The explained part of the wage differential is accounted by differences in age (23.2%), education (6.7%), religion (7.8%), marital status (14%), household headship (25.6%) and wealth (32.3%). Together, the two occupation categories (8 – plant and machine operators and assemblers and 10 – army members) account 56% of the explained wage gap. Factors which significantly contribute to the unexplained gender pay gap are education, marital status and family size.

Table 19: Factors explaining the wage gap

Variables	(1) Explained	(2) Unexplained
Age	0.209*** (0.0434)	
Age square	-0.171*** (0.0372)	
Certificate and above	0.0110* (0.00657)	-0.0694** (0.0328)
Religion (1=Muslim)	0.0128*** (0.00459)	
Married	0.0231** (0.0116)	-0.101* (0.0526)
Household head	0.0420** (0.0184)	
Family size		-0.233*** (0.0792)
Wealth index	-0.0530*** (0.00976)	
Occupation8	0.0556*** (0.0157)	
Occupation10	0.0364** (0.0147)	
Total	0.164*** (0.0299)	0.463*** (0.0441)
Observations	2,506	2,506

Table 20 and 21 presents results of the Blinder-Oaxaca decomposition analysis for sales gap. Similar to wage gap analysis, only coefficients of variables which significantly account for the explained and unexplained sales gap are reported in Table 20. Based on the decomposition model, the unconditional sales gap between men and women non-farm enterprises owners is estimated to be 80.6% where 36% of it explained by predictors included in the model.

Table 20: Sales gap decomposition

Variables	(1) Differential	(2) Decomposition
Mean log sales (Men)	8.009*** (0.0649)	
Mean log sales (Women)	7.203*** (0.0602)	
Difference	0.806*** (0.0885)	
Explained		0.290*** (0.0748)
Unexplained		0.516*** (0.0926)
Observations	1,601	1,601

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The explained part of the gender sales gap is accounted by difference in education (9%), religion (5.9%), wealth (17%), business license (14.5%), operating cost (27%) and residence (8.2%). Factors which significantly contribute for the unexplained portion of gender sales gap are religion, marital status, wealth, seasonality of business activity and operating cost.

Table 21: Factors explaining the sales gap

Variables	(1) Explained	(2) Unexplained
Above certificate	0.0261*** (0.0100)	
Religion (1=Muslim)	0.0172* (0.0102)	-0.106** (0.0478)
Married		-0.311** (0.146)
Wealth Index	0.0494*** (0.0190)	0.190** (0.0787)
Licensed enterprise	0.0423** (0.0209)	
Seasonal activity		0.125** (0.0541)
Log total cost	0.0785** (0.0305)	-0.469** (0.199)
Rural	0.0253* (0.0140)	
Total	0.290*** (0.0748)	0.516*** (0.0926)
Observations	1,601	1,601

7. Conclusion and Policy Implications

7.1 Conclusion

The participation of women in the labor market shows great disparity across various regions of the world. Such differences are attributed to a range of factors including the level of economic development, education attainment, social norms, fertility rate, national policies and access to support systems such as child care. Ethiopia is showing notable improvement in addressing gender gap in various social and political domains. However, gender gap in economic participation is still significant and extra effort is required to increase women's participation in the labor force. In sight of this, the study analyzes the status of gender gap in labor force participation and, factors which influence men's and women's decision to work and how much to work in wage and self-employment. The study mainly utilizes the recent round (2018/19) Ethiopia Socioeconomic

Survey (ESS) to meet its objectives. The 2015/16 round of the same survey was also used for comparison purpose in the descriptive analysis section.

The situation analysis indicated that women participation in the labor force is significantly lower than men and it is not showing notable change over time both in rural and urban areas. Lower participation of women is observed in all economic activities considered in the study except ownership of non-farm enterprises which are mainly household business. The education level of women is generally found to be lower compared to men. Among active participants in the labor market, the share of uneducated women is considerably higher than men while women having tertiary education of certificate, diploma, first degree and graduate degree are significantly lower than men.

Participation in wage activity is generally low in the sample but women participation is even lower than men. Women wage employees are less by half compared to men participants and they account only about one-third of the wage workers in the sample. Though the education profile of wage employees is generally low in the sample (61% have below tertiary education), compared to women, higher percentage of men possess first and graduate degree. Elementary and non-professional occupations account significant share of wage employment whereas the percentage of legislators, senior government officials and managers is very low. Women show less representation in top positions (legislators, senior government officials and managers) while they dominate elementary occupations relative to men. Having a paid job thus might not be necessarily empowering for women if they continue to dominate elementary jobs which are often low quality, low paying and underpin traditional gender roles. Gender disparity in sector selection is also observed among wage workers where the service and trade sectors are largely comprised by women while the construction sector is dominated by men.

Regarding ownership of non-farm enterprises, significant gender disparity is not observed. Majority of the non-farm enterprise owners possess below tertiary education. Retail trade is the main economic activity among the self-employed and women account relatively higher percentage than men. Even if there are no significant gender disparities in ownership of non-farm enterprises, women owned enterprises show less performance when various indicators are considered. Women owned enterprises make significantly less sales than their men counterparts. They also tend to participate more in the informal sector given

that the percentage of women owned enterprises with business license are significantly lower. The number of workers and the firm size women owned enterprises are also by far lower than men which might be an indication of their limited growth potential.

The econometric analysis results also support findings in the situational analysis where women's participation and hour of work (work intensity) are found to be less compared to men controlling for various individual and household characteristics. Age, education, religion, marital status, household headship, family size, wealth, non-farm income and residence are the main factors which explain such disparities in decision to work and how much to work. Education stands out as the main factor which positively affects women's overall participation in labor market. Also, women having tertiary education have a higher participate in the labor market and work more hours compared to women with no such education. However, compared to married men, married woman show less participation in the labor market and work fewer hours. Women's age and household headship also show significant positive association with both participation in the labor market and hour of work while the effect of family size on hour of work is negative.

Women also have significantly lower participation in wage employment and earn lower wage than men controlling for individual and household characteristics. Age, education, household headship and wealth are factors which significantly associate with women's participation in wage employment. In particular, though women education in general is crucial in boosting their participation in wage employment, tertiary education is found to be more relevant than primary and secondary education. Married women show less participation in wage employment compared to their male counterparts. Similarly, residence in rural areas, having large family size and non-labor income are factors which associate with less participation of women in wage employment. Women household heads and those from wealthier households are more likely to participate in wage employment.

Women have relatively higher chance of participation in ownership of non-farm household business compared to men while controlling for various individual and household characteristics. However, the sales of women owned enterprises are significantly lower than their men counterparts. Education

negatively associates with women's participation in self-employment where women having tertiary education are less likely to own non-farm enterprises. Education however is associated with higher business sales. Additional factors which positively associate with business sales include business license, number of hired workers and operating cost. Moreover, women with large family size and those living in rural areas show less participation in self-employment.

The Blinder-Oaxaca decomposition analysis indicated that the unconditional wage gap between men and women is 62.7% where 26.2% of the gender wage gap is explained and the remaining 73.8% is unexplained. Age, education, religion, marital status, household headship, wealth and occupation are factors which account the explained part of the wage gap. For non-farm enterprises owners, the unconditional sales gap between men and women is estimated at 80.6% where 36% of it explained by variables included in the model. The explained part of the gender gap in sales is accounted by difference in education, religion, wealth, business license, operating cost and residence.

7.2 Policy Implications

Education is found to be very important for women's participation in the labor force. The findings from this study show that having tertiary education matters more for participation in wage employment. The participation of women in wage employment is found to be lower compared to men and those who participate tend to concentrate in elementary and service-related jobs. Therefore, if women are to work in better paid jobs their education attainment should expand beyond primary education. Higher education attainment will result in better earning, increased opportunity cost of not working and a higher chance of getting decent jobs. All of these will serve as pull factor helping women to overcome socio-economic constraints limiting them to work in income generating activities outside of home. Better education for women is also important in narrowing observed wage and sales gap between men and women. However, given that the current education level of women in Ethiopia is limited, short term actions should focus on creating job opportunities that fit the existing education profile of women in the country. In addition, it should be noted that jobs that require higher level of education are limited in nature and hence simply expanding the education

attainment of women will not grantee them being employed in better jobs. The labor market should be diversified to accommodate women with different level of education and types of skills.

Similarly, though women have higher participation in ownership of non-farm employment, large majority of self-employed women work in retail trade. Increasing the active participation of women in the labor market is crucial but ensuring whether the participation is empowering or not should also be given due attention. This is important because in many developing countries women join the labor force due to distress often as a surviving strategy in response to economic hardships and shocks faced by their household. Such economic activities are often disempowering and reinforce the traditional gender role of women. The quality of work that women are able to access and engage in is thus equally important as the rate of participation. Unless interventions aimed at increasing the economic participation women go beyond numbers and take the quality of work in to consideration, the sustainability of achievements will be in question. Women who participate in the labor market as coping mechanism to economic shocks often leave the labor market as soon as it is affordable to do so.

Among social factors, marital status is found to be a key factor in influencing women's decision to work and how much to work. In particular, married women show less overall participation in the labor market and particularly in wage employment. Married women also work less hour. Marriage reduces women's participation in the labor market through various channels. First, marriage especially early marriage reduces the education attainment for women decreasing the chance of getting paid job. Second, after marriage, the household responsibility of women increases tremendously with child bearing. If marriage is accompanied by higher fertility, the chance of a woman to participate in economic activities will become even lesser because the opportunity cost of participating in the labor market will upsurge. Third, social and cultural norms also restrict the labor force participation of married women with children. In Ethiopia, especially in rural areas, the role of married women is often restricted to taking care of families and children. The attitude and education level of the married woman's husband and other family members also shapes her participation in the labor force. Increasing the economic participation of married women thus requires interventions ranging from gradually changing traditional social norms to establishing support systems that assist them to take part in

productive economic activities. Gender sensitive labor policies which include paid maternity leave and adequate and affordable child care services are important to enhance the labor force participation of a married woman. Such interventions are also vital in reducing the double burden faced by working married women.

Women non-farm enterprise owners seem to perform less in terms of sales, business legalization, and firm size. Government support programs thus should give special emphasis to women entrepreneurs. Such programs should encourage women non-farm enterprise owners to legalize their business. Having a business license will assist them to go out of informal sector, expand their production/services, have better access to finance and other government support services (such as working premises). An intermediary that facilitate and finance the transition of women owned enterprises from informal to formal, and from micro to small and medium-scale enterprises should be included as part of government support programs. Most women sell their products to immediate local customers. Limited market access means fewer customers, tight competition with local sellers, lower prices, lesser return and reduced potential to grow. Women entrepreneurs thus need support to access broader and more rewarding markets. Government and NGO supported programs can assist women by giving trainings that enhance women's knowledge and skill on how to build business networks, exploit wider markets and advertise their products/services. Providing the required resource for market expansion, skill trainings and exhibitions are some of the actions that can be taken by government and NGOs to expand the market access and sales of women entrepreneurs.

There are additional constraints than hinder effective operation and growth of non-farm enterprises which are common to both women and men owners. These includes lack of access to production and marketing place, lack of government support, lack of access to finance, lack of raw materials, excessive bureaucracy, stiff competition, corruption and high interest rate. Government related obstacles of inadequate business premises and poor infrastructure supply (water and electricity) are also hindrances to business growth and expansion. Though these challenges are common to both men and women entrepreneurs, especial emphasis should be given to women non-farm business owners facing such problems given that they already hold vulnerable position and show weak performance.

Appendix

Table A1: Participation in wage employment (Heckman Selection Model, Women only sample with categorical education variable)

Variables	(1) Logarithm of Hourly Wage	(2) Participation (coeff.)	(3) Participation (margins)
Age	0.0578*** (0.0140)	0.0905*** (0.0107)	0.0260*** (0.00311)
Age Squared	-0.000696*** (0.000190)	-0.00124*** (0.000140)	-0.000357*** (4.07e-05)
Education (Base=Primary Education)			
Not Educated	-0.0870 (0.0827)	-0.130** (0.0644)	-0.0375** (0.0185)
Secondary Education	0.0720 (0.0773)	-0.0185 (0.0613)	-0.00533 (0.0176)
Tertiary (Certificate)	0.148 (0.154)	0.282** (0.129)	0.0811** (0.0372)
Tertiary (Not completed)	0.289* (0.153)	0.182 (0.128)	0.0523 (0.0368)
Tertiary (Diploma)	0.430*** (0.112)	0.884*** (0.0852)	0.254*** (0.0240)
Tertiary (First degree)	0.876*** (0.119)	0.954*** (0.0923)	0.274*** (0.0255)
Tertiary (Graduate degree)	1.070*** (0.186)	1.257*** (0.222)	0.361*** (0.0625)
Religion (Base=Christian)			
Muslim		-0.190*** (0.0593)	-0.0536*** (0.0163)
Others		-0.190 (0.333)	-0.0536 (0.0893)
Married		-0.363*** (0.0538)	-0.104*** (0.0155)
Household head		0.214*** (0.0619)	0.0616*** (0.0178)
Family size		-0.0749*** (0.0126)	-0.0215*** (0.00363)
Children under 5 years		0.0918* (0.0541)	0.0264* (0.0156)
Dependency ratio		0.000897 (0.0386)	0.000258 (0.0111)
Wealth Index		0.0124*** (0.00425)	0.00358*** (0.00122)
Non-labor income		-0.0136*** (0.00525)	-0.00390*** (0.00151)
Formal loan		0.0323 (0.205)	0.00930 (0.0590)
Illness/injury		0.137 (0.121)	0.0394 (0.0349)
Rural		-0.659*** (0.0688)	-0.190*** (0.0203)
Constant	1.214*** (0.348)	-2.501*** (0.195)	
Regional Dummy		Yes	Yes
Observations	8,859	8,859	930

References

- Abagissa, J. (2013). Challenges Confronting Women in Micro and Small Enterprises in Addis Ababa, Ethiopia. *Ethiopian Journal of Business and Economics*, 3(1), 95–139.
- Ackah, C., Ahiadeke, C., & Fenny, A. P. (2009). Determinants of Female Labour Force Participation in Ghana (Global Development Network Working Paper Series No. 14).
- Alene, E. T. (2020). Determinants that influence the performance of women entrepreneurs in micro and small enterprises in Ethiopia. *Journal of Innovation and Entrepreneurship*, 9(24), 1–20. <https://doi.org/10.1186/s13731-020-00132-6>
- Amha, W. (2015). Growth of Youth-owned MSEs in Ethiopia: Characteristics, Determinants and Challenges. *Ethiopian Journal of Economics*, XXIV (2), 93–128.
- Andersen, M., & Havnes, T. (2019). Child Care, Parental Labor Supply and Tax Revenue. *Labor Economics*, 61(101762).
- Assefa, M., & Cheru, E. (2018). Factors Affecting the Growth of Women-Operated Micro and Small Enterprises (MSEs) in Ethiopia. *Abyssinia Journal of Business and Social Sciences Factors*, 3(1), 32–38. <https://doi.org/10.22521/unibulletin.2017.61.5>
- Bbaale, E. (2014). Female Education, Labour-force Participation and Fertility: Evidence from Uganda B. Nairobi.
- Becker, G.S. (1975). *Human capital: A theoretical and empirical analysis, with special reference to education*. Columbia University Press.
- Becker, Gary S. (1965). A Theory of the Allocation of Time. *The Economic Journal*, 75(299), 493–517.
- Bekana, D. M. (2020). Policies of Gender Equality in Ethiopia: The Transformative Perspective. *International Journal of Public Administration*, 43(4), 312–325. <https://doi.org/10.1080/01900692.2019.1628060>
- Beyene, H. (2015). National Assessment: Ethiopia Gender Equality and the Knowledge Society. Retrieved from [https://www.owsd.net/sites/default/files/National Assessment on Gender and STI - Ethiopia_0.pdf](https://www.owsd.net/sites/default/files/National%20Assessment%20on%20Gender%20and%20STI%20-%20Ethiopia_0.pdf)
- Bick, A., & Fuchs-Schündeln, N. (2017). Quantifying the Disincentive Effects of Joint Taxation on Married Women’s Labor Supply. *American Economic Review*, 107(5), 100–104.
- Blau, F. ., & Kahn, L. . (2013). Female Labor Supply: Why Is the US Falling Behind? (NBER Working Paper 18702).
- Bloom, D. E., Canning, D., Fink, G., & Finlay, J. E. (2009). Fertility, Female Labor Force Participation, and the Demographic Dividend. *Journal of Economic Growth*, 14(2), 79–101.

- Blundell, R., & MaCurdy, T. (1999). Labor Supply: a Review of Alternative Approaches BT - Handbook of Labor Economics. Handbook of Labor Economics, 3, 1559–1695. Retrieved from <http://linkinghub.elsevier.com/retrieve/pii/S1573446399030084>0Apapers3://publication/doi/10.1016/s1573-4463(99)03008-4
- Boserup, E. (1970). *Woman's Role in Economic Development*. St. Martin's Press, New York.
- Cameron, L. A., Dowling, J. M., & Worswick, C. (2001). Education and labor market participation of women in Asia: Evidence from five countries. *Economic Development and Cultural Change*, 49(3), 459–477. <https://doi.org/10.1086/452511>
- Christiansen, L., Lin, H., Pereira, J., Topalova, P., & Turk, R. (2016). Individual Choice or Policies? Drivers of Female Employment in Europe March (No. IMF Working Paper WP/16/49).
- Clark, R., York, A., & Anker, R. (2003). Cross-national Analysis of Women in the Labour Market. In R. Anker & A. Pinelli (Eds.), *Women in the Labour Market in Changing Economies: Demographic Issues* (pp. 13–34). Oxford University Press, Oxford.
- CSA. (2006). Report on the 2005 National Labour Force Survey. Statistical Bulletin No. 365, Addis Ababa, May 2006.
- _____. (2014). Statistical Report on the 2013 National Labour Force Survey, Addis Ababa, March 2014.
- _____. (2016). Statistical Report on the Urban Employment Unemployment. Statistical Bulletin No. 581, Addis Ababa, August 2016.
- _____. (2020). The 2020 Urban Employment Unemployment Survey: A Comparative Analysis with 2014-2016 and 2018 Survey Results. Addis Ababa, May 2020.
- Cuberes, D., & Teignier, M. (2011). Gender Inequality and Economic Growth. World Development Report 2012, Background Paper.
- Dinkelman, T. (2011). The Effects of Rural Electrification on Employment: New Evidence from South Africa. *American Economic Review*, 101(7), 3078–108.
- Drucza, K., & Rodriguez, C. (2018). Feminist policy analysis: implications for the agricultural sector in Ethiopia. Addis Ababa, Ethiopia.
- Eckstein, Z., & Lifshitz, O. (2011). Dynamic Female Labor Supply. *Econometrica*, 79(6), 1675–1726.
- Eshetu, B., & Zeleke, W. (2008). Women entrepreneurship in micro, small and medium enterprises: The case of Ethiopia. *Journal of International Women's Studies*, 10(2), 3–5.
- Fabrizio, S., Fruttero, A., Gurara, D., Kolovich, L., Malta, V., Tavares, M. M., & Tchelishvili, N. (2020). Women in the Labor Force: The Role of Fiscal Policies (MF Staff Discussion Note No. 20/03).

- Fatima, A., & Sultana, H. (2009). Tracing out the U-shape relationship between female labor force participation rate and economic development for Pakistan. *International Journal of Social Economics*, 36(1–2), 182–198. <https://doi.org/10.1108/03068290910921253>
- Fernández, R. (2013). Cultural Change as Learning: The Evolution of Female Labor Force Participation over a Century. *American Economic Review*, 103, 472–500.
- Field, E., Glennerster, R., Nazneen, S., Pimkina, S., Sen, I., & Buchmann, N. (2018). Age at marriage, women's education, and mother and child outcomes in Bangladesh January 2018. New Delhi: International Initiative for Impact Evaluation.
- Gaddis, I., & Klasen, S. (2014). Economic development, structural change, and women's labor force participation: A reexamination of the feminization U hypothesis. *Journal of Population Economics*, 27(3), 639–681. <https://doi.org/10.1007/s00148-013-0488-2>
- Gebreeyesus, M. (2007). Growth of Micro-Enterprises: Empirical evidence from Ethiopia. Ethiopian Development Research Institute (EDRI). Retrieved from <http://www.csae.ox.ac.uk/conferences/2007-EDiA-LaWBIDC/papers/275-Gebreeyesus.pdf>
- Gebremariam, F. M. (2017). Factors Affecting the Growth of Women-Operated Micro and Small Enterprises (MSEs) in Ethiopia. *Üniversitepark Bülten*, 6(1), 56–66. <https://doi.org/10.22521/unibulletin.2017.61.5>
- Goldin, C. (1995). *The U-Shaped Female Labor Force Function in Economic Development and Economic History*. In S. TP (Ed.), *Investment in Women's Human Capital and Economic Development* (pp. 61–90). University of Chicago Press, Chicago.
- Gronau, R. (1977). Leisure, Home Production, and Work - the Theory of the Allocation of Time Revisited. *Journal of Political Economy*, 85, 1099–1123.
- Güven-Lisaniler, F., & Bhatti, F. (2005). Determinants of female labour force participation: a study of North Cyprus. *Review of Social, Economic & Business Studies*, 5/6(January), 209–226. Retrieved from <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Determinant+s+of+Female+Labour+Force+Participation+:+A+Study+of+North#3>
- Heath, R., & Jayachandran, S. (2017). The Causes and Consequences of Increased Female Education and Labor Force Participation in Developing Countries (NBER Working Paper 22766).
- Heckman, J. J., & MaCurdy, T. E. (1980). A Life Cycle Model of Female Labor Supply. *Review of Economic Studies*, 47(1), 47–74.
- Hosney, S. H. (2015). Factors Influencing Female Labor Force Participation in Egypt and Germany: A Comparative Study. *Turkish Economic Review*, 3(3), 537–541. <https://doi.org/10.1453/ter.v3i3.1029>
- ILO. (2003). *Jobs Gender and Small Enterprises in Africa: Ethiopian Women Entrepreneurs Going for Growth*. International Labour Organization 2003.

- Ince, M. (2010). How the education affects female labor force? Empirical evidence from Turkey. *Procedia - Social and Behavioral Sciences*, 2(2), 634–639. <https://doi.org/10.1016/j.sbspro.2010.03.076>
- International Development Research Center (IDRC). (2020). Policy mapping : Women’s economic empowerment in Ethiopia. Report by Includovate.
- Jann, B. (2008). The Blinder – Oaxaca decomposition for linear regression models, 8(4), 453–479.
- Kalb, G. (2018). Paid Parental Leave and Female Labor Supply: A Review. *Economic Record*, 94(304), 80–100.
- Khadim, Z., & Akram, W. (2013). Female Labor Force Participation in Formal Sector: An Empirical Evidence from PSLM. *Middle-East Journal of Scientific Research*, 14(11), 1480–1488.
- Khanie, G. (2019). Impact on the Botswana Economy Education and Labour Market Activity of Women in Botswana (BIDPA Working Paper 61). https://doi.org/10.1057/9781137537614_10
- Klasen, S. (2019). What Explains Uneven Female Labor Force Participation Levels and Trends in Developing Countries? *World Bank Research Observer*, 34(2), 161–197. <https://doi.org/10.1093/wbro/lkz005>
- Koolwal, G., & van de Walle, D. (2013). Access to Water, Women’s Work, and Child Outcomes. *Economic Development and Cultural Change*, 61(2), 369–405.
- Lam, D., & Duryea, S. (1999). Effects of schooling on fertility, labor supply, and investments in children, with evidence from Brazil. *Journal of Human Resources*, 160–192.
- Lei, L., Desai, S., & Vanneman, R. (2019). The Impact of Transportation Infrastructure on Women’s Employment in India. *Feminist Economics*, 25(4), 94–125.
- Loko, B., & Diouf, M. A. (2009). Revisiting the Determinants of Productivity Growth: What’s New? IMF Working Paper Middle East and Central Asia Department Revisiting the Determinants of Productivity Growth: What’s new?
- Luci, A. (2009). Female Labour Market Participation and Economic Growth. *International Journal of Innovation and Sustainable Development*, 4(2/3), 97–108.
- Mamdouh Altarawneh, Y. (2020). Explaining the Gender-Gap in Economic Activity: A Cross-Country Study. *Research in World Economy*, 11(5), 16. <https://doi.org/10.5430/rwe.v11n5p16>
- Mammen, K., & Paxson, C. (2000). Women’s Work and Economic Development. *Journal of Economic Perspectives*. *Journal of Economic Perspectives*, 14(4), 141–164.
- Mariara, J., McKay, A., Newell, A., & Rienzo, C. (2018). Gender gaps in the path to adulthood for young females and males in six African countries from the 1990s to the 2010s. *IZA Journal of Development and Migration*. <https://doi.org/10.1186/s40176-018-0124-8>
- Mincer, J. (1962). Labor Force Participation of Married Women: A Study of Labor Supply. *Aspects of Labor Economics* (Vol. 1).

- MoFED. (2005). Plan for Accelerated and Sustained Development to End Poverty (2005/06-2009/10). Addis Ababa, Ethiopia. Retrieved from [http://www.afdb.org/fileadmin/uploads/afdb/Documents/Policy-Documents/Plan_for_Accelerated_and_Sustained_\(PASDEP\)_final_July_2007_Volume_I_3.pdf](http://www.afdb.org/fileadmin/uploads/afdb/Documents/Policy-Documents/Plan_for_Accelerated_and_Sustained_(PASDEP)_final_July_2007_Volume_I_3.pdf)
- MoFED. (2010). Growth and Transformation Plan (GTP) for 2010/2011-2014/2015. Addis Ababa, Ethiopia.
- MoWA. (2006). National Action Plan for Gender Equality (NAP-GE) 2006-2010. Addis Ababa, Ethiopia.
- MOWCY, UNICEF Ethiopia, & SPRI. (2019). Gender Equality, Women's Empowerment and Child Wellbeing in Ethiopia.
- Mujahid, N. (2014). Determinants of Female Labor Force Participation: A Micro Analysis of Pakistan. *International Journal of Economics and Empirical Research*, 2(5).
- Mukherjee, S. S. (2015). More educated and more equal? A comparative analysis of female education and employment in Japan, China and India (Paper 48).
- National Planning Commission (NPC). (2016). Growth and Transformation Plan II (GTP II) (2015/16-2019/20). Addis Ababa, Ethiopia. Retrieved from http://www.npc.gov.et/web/guest/gtp/-/document_library_display/48Gh/view/58840
- Ogato, S. (2013). The quest for gender equality and womens empowerment in least developed countries: Policy and strategy implications for achieving millennium development goals in Ethiopia. *International Journal of Sociology and Anthropology*, 5(9), 358–372. <https://doi.org/10.5897/ijasa2013.0454>
- Ostry, J., Alvarez, J., Espinoza, R., & Papageorgiou, C. (2018). Economic Gains From Gender Inclusion: New Mechanisms, New Evidence. *Staff Discussion Notes*, 18(06), 1. <https://doi.org/10.5089/9781484337127.006>
- Pissarides, C., Garibaldi, P., Olivetti, C., Petrongolo, B., & Wasmer, E. (2005). Women in the Labour Force: How Well is Europe Doing. In T. Boeri, D. Del Boca, & C. Pissarides (Eds.), *European Women at Work*. Oxford University Press.
- Psacharopoulos, G., & Tzannatos, Z. (1989). Female labor force participation: An international perspective. *World Bank Research Observer*, 4(2), 187–201. <https://doi.org/10.1093/wbro/4.2.187>
- Sackey, H. A. (2005). Female labour force participation in Ghana: The effects of education (AERC Reseach Paper 150).
- Schultz, T. W. (1961). Investment in Human Capital. *The American Economic Review*, 51(1), 1–17.
- Sinha, J. N. (1967). Dynamics of Female Participation in Economic Activity in a Developing Economy. In *In Proceedings of the World Population Conference, Belgrade, 1965. Vol. 4, Migration, Urbanization, Economic Development*. New York: United Nations.

- Solomon, D. (2010). Desk Review of Studies Conducted on Women Entrepreneurs in Ethiopia. Private Sector Development Hub/Addis Ababa Chamber of Commerce and Sectoral Associations, 2010.
- Tam, H. (2011). U-shaped Female Labor Participation with Economic Development: Some Panel Data Evidence. *Economics Letters*, 110(2).
- Tumsarp, P., & Pholphirul, P. (2020). Does Marriage Discourage Female Labor Force Participation? Empirical Evidence from Thailand. *Marriage and Family Review*, 56(7), 677–688. <https://doi.org/10.1080/01494929.2020.1740370>
- UN Women. (2014). Preliminary Gender Profile of Ethiopia. Addis Ababa, Ethiopia.
- Uwakwe, M. O. (2004). Factors Affecting Women's Participation In The Labour Force In Nigeria. *Journal of Agriculture and Social Research (JASR)*. <https://doi.org/10.4314/jasr.v4i2.2815>
- Verbeek, M. (2004). *A Guide to Modern Econometrics* (2nd ed.). The Atrium, Southern Gate, Chichester, England: John Wiley & Sons Ltd.
- Wainerman, H. C. (1980). The Impact of Education on the Female Labor Force in Argentina and Paraguay. *Comparative Education Review*, 24(2), S180–S195.
- Woldehanna, T., Amha, W., & Yonis, M. B. (2018). Correlates of business survival: empirical evidence on youth-owned micro and small enterprises in Urban Ethiopia. *IZA Journal of Development and Migration*, 8(1), 1–26. <https://doi.org/10.1186/s40176-018-0122-x>
- Wooldridge, J. M. (2013). *Introductory Econometrics: A Modern Approach* (5th ed.). South-Western, Cengage Learning.
- World Bank. (2014). Enterprise Surveys: Ethiopia 2015 Country Profile. International Bank for Reconstruction and Development / The World Bank Group. <https://doi.org/10.1596/32087>
- _____. (2019). Ethiopia Gender Diagnostic Report: Priorities for Promoting Equity. International Bank for Reconstruction and Development / The World Bank
- World Development Indicators, The World Bank. (2019). Last Updated date 02/17/2021. (n.d.).
- World Economic Forum. (2019). Global Gender Gap Report 2020: Insight Report. Retrieved from http://www3.weforum.org/docs/WEF_GGGR_2020.pdf
- Yakubu, Y. a. (2010). Factors Influencing Female Labor Force Participation in South Africa in 2008. *The African Statistical Journal*, 11, 85–104.