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Occupational Segregation and the Gender Wage Gap: Evidence from Ethiopia *

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Abstract

This paper examines the role of female occupational segregation on the gender wage gap across the entire wage distribution. Using the Ethiopian labor force survey, I employ unconditional quantile regression based on the recentered influence function and correct sample selection issues that arise due to nonrandom decision of female labor force participation using Heckman's two-stage method for baseline estimation. The results show that women earn less than men throughout the wage distribution, even after controlling for personal and labor market characteristics. Importantly, female occupational segregation has a negative coefficient across the wage distribution except at the end of the distribution and partly explains the gender wage gap at the bottom and median percentile of the wage distribution. Using the recentered influence function decomposition, I find that the gender wage gap due to structural effect is highest at the bottom of the wage distribution, evidence of *sticky floor effects*. Finally, the estimation shows that the gender wage gap is higher in the private sector than in the public sector across the wage distribution.

Keywords:Occupational segregation, gender wage gap, unconditional quantile regression, Ethiopia

JEL classifications:C21; J3; J16; J71

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1 Introduction

Closing the gender inequality in the labor market is crucial to achieving economic growth and women's empowerment goals. Women's earnings can reduce poverty through higher consumption and expenditure and enhance economic growth by higher savings and investment (Morrison and Morrison 2007). In this regard, many developing countries, including Ethiopia, have made improvements in female education levels (Klasen 2018). However, the empirical evidence on gender wage inequality in Africa remains limited despite the abundant academic work on this important topic in almost all industrial countries[1](Appleton et al. 1999; Weichselbaumer and Winter-Ebmer 2005; Fafchamps et al. 2009). For instance, Nordman and Wolff (2009) note that out of all empirical evidence in Weichselbaumer and Winter-Ebmer (2005) international meta-analysis review, only 3% of the studies stem from data from Africa.

The empirical evidence from several developed countries shows that occupational segregation explains a large part of the gender wage gap (Groshen 1991; Sorensen 1990; Cortes and Pan 2018; Blau and Kahn 2017). For example, a recent study by Blau and Kahn (2017) emphasizes that differences in occupation and industry are key factors in explaining the wage gap between men and women. It is well known that occupations are disproportionately distributed by gender (Goldin 2014), and occupations overrepresented by women tend to pay lower wages than occupations overrepresented by men. Evidence shows a negative correlation between the share of females in occupations and wages with similar observed characteristics (Levanon et al. 2009; Hegewisch et al. 2010; England and Hermsen 2000). Therefore, understanding the role of occupational segregation in explaining gender wage inequality in the context of an African country is vital from equality and economic perspectives and thus deserves analysis.

This paper examines the impact of female occupational segregation on gender wage inequality across different unconditional wage distributions using the 2013 Labor Force Survey in Ethiopia. More precisely, I investigate whether an increased share of female employees in an occupation leads to lower wages. If so, how does this influence the gender wage gap? In addition, this study investigates the presence of the glass ceiling or sticky floor phenomenon: whether the gender wage gap is higher at the top of the pay distribution or the bottom. Since Albrecht et al. (2003) found the glass ceiling effects for Sweden, it has become

[1]The empirical evidence confirms the persistence of gender wage inequality in all studied countries (see, for example, Sorenson, 1989, Blau and Beller, 1988 and Blau and Kahn, 1996 for more discussion)

clear that the gender wage gap is not constant between low and high wage distributions. To do this, I estimate unconditional quantile regression based on the Recentered Influence Function (RIF thereafter) method developed by Firpo et al. (2009). This method is suited to analyze the gender wage inequality beyond mean estimation and test whether the gender pay gap is larger at the top of the pay distribution than at the bottom of the wage distribution.

I then apply the RIF decomposition technique proposed by Firpo et al. (2018) to decompose the gap into endowment effects and structural effects across the different wage distributions. The endowment effect is the part of the gender wage gap that is attributed to the gender difference in characteristics, and the structural difference is the part of the gap that is attributed to the gender difference in reward for those characteristics. For comparison purposes, I present Oaxaca-Blinder (Oaxaca 1973; Blinder 1973) decomposition (OB henceforth) in the Appendix. I finally provide a heterogeneity analysis of the gender wage gap for the public and private sectors separately.

The result shows that women earn lower monthly wages than men throughout the wage distribution even after controlling for a long list of individual and labor market characteristics. The female dummy coefficient is 19.6% at the median, varying from 12.9% at the 10th percentile to 13.4% at the 90th percentile. I find evidence of sticky floor effects in Ethiopia. But when female occupational segregation is added to the regression, the sticky floor effects disappear, suggesting that female occupational segregation partially explains the gender wage gap at the bottom of the wage distribution. The gender wage gap is wider at the 25th percentile. The estimation shows that the share of female employees in the occupation is negatively associated with earnings except at the top of the wage distribution. The finding shows that a 10 percentage point increase in the share of female employees in occupations would lead to a decline in monthly earnings between 40.8% and 10.3% at the 10th and the 75th percentile of the wage distribution, respectively. This negative correlation is most pronounced among female workers, indicating that in occupations where women are overrepresented, they are paid significantly less than men.

The estimation results from heterogeneity analysis show that women earn lower monthly wages than comparable men across the wage distribution. The gap is higher in the private sector than in the public sector. Moreover, the finding shows a significant negative correlation between female occupational segregation and earnings in both sectors. The negative influence of female occupational segregation is most pronounced in the public sector, in the middle and top of the wage distribution. Finally, RIF quantile decomposition results

show that differences in characteristics between men and women explain about 80 percent of the gender wage gap at the 90th percentile of the wage distribution. Conversely, the gender wage gap attributable to the structural effects is highest at the bottom of the wage distribution, suggesting evidence of a sticky floor effect. The finding suggests that policies should prioritize tackling discrimination against women in hiring. Targeted policies that enable equal access to male-dominated and the introduction of minimum wage may mitigate female occupational segregation and the sticky floor effects in Ethiopia.

This paper contributes to the existing research on gender economics in the following ways: First, I add to the growing literature on the determinants of the gender wage gap by providing up-to-date and nationally representative empirical evidence for Ethiopia. Existing studies reveal that women significantly earn less than men. Using the OB method, Temesgen (2006) shows that 60% of the gender wage gap is due to discrimination against women in the manufacturing sector. Another academic work for the manufacturing sector by Fafchamps et al. (2009) shows that an unexplained part of the gender wage gap is largely due to differences in selection across occupations. Similarly, Appleton et al. (1999) also shows that nepotism towards men and discrimination against women in the labor market partially explain the gender wage gap in urban Ethiopia. Using the 2005 Labor Force Survey and OB technique, Kolev and Robles (2010) find that occupational differences between males and females explain 50% of the gender wage gap. Recently, using firm-level data in the Ethiopian manufacturing sector, Abegaz and Nene (2023) found firms with a higher share of women employment pay lower average wages than firms with a higher share of men employment. In their OLS estimation, the authors show the segregation of female workers into low-wage firms accounts for about 10% of the gender wage gap.

Second, I investigate whether female occupational segregation accounts for the observed gender wage gap at the mean and the selected percentiles. I argue that the negative correlation between the increased share of the female workforce and earnings is due to women facing employer discrimination in hiring for high-paying jobs, therefore being crowded into low-paid jobs. Third, using the unconditional quantile regression and RIF decomposition method, I quantify the magnitude of the gender wage gap at specific quantiles. More specifically, this paper speaks to the literature on the effects of glass ceilings and sticky floors by providing evidence for the Ethiopian labor market using unconditional quantile regression and RIF decomposition.

The empirical findings on the effects of glass ceilings and sticky floors in Africa are

mixed.[2]. Using conditional quantile regression with decomposition analysis, Nordman and Wolff (2009) find evidence of glass ceiling effects in the manufacturing sector of Morocco. In contrast, Ntuli (2009) and Bhorat and Goga (2013) find evidence of sticky floors in South Africa using employing conditional quantile regression. Using the unconditional quantile regression method for Kenya, Agesa et al. (2013) shows evidence of the glass ceiling effects at the top of the wage distribution and the sticky floor effects at the bottom. To the best of my knowledge, this is one of the first papers that examine the gender wage gap across wage distribution using an unconditional quantile regression method.

Finally, the study provides heterogeneity analysis by sector. The public and private sectors have different labor market institutions that might determine wages. In Ethiopia, even though trade unions are generally weak,[3] trade unions in the public sector are stronger than in the private sector (Kibru 2012). The public sector thus has a better legal and institutional framework that may differ in wage setting and working conditions. As a result, the pay level in the public sector may be higher than in the private sector.

Moreover, in Ethiopia, there is no legally set national minimum wage for workers in the private sector[4] while the public sector has a minimum wage provision. Thus, gender wage inequality may be more pronounced in the private sector than in the public sector due to the absence of a minimum wage. There is ample evidence that confirms the introduction of minimum wage reduces the gender wage gap (e.g., Caliendo and Wittbrodt 2022). Similarly, Mosomi (2019) finds a reduction of the gender wage gap at the bottom of the wage distribution is due to implementing the minimum wage in low-paying jobs in South Africa.

Furthermore, the public and private sectors differ in gender composition: the public sector constitutes the largest share of workers in the formal employment sector and the larger employer of women than the private sector. This may have different implications for occupational segregation and gender wage inequality. Therefore, sectoral desegregation is important in understanding the influence of occupational segregation on gender wage differences.

[2]In most developed economies, the evidence confirms the "glass ceiling" effect. E.g. for UK, Chzhen & Mumford(2011); for the Netherlands, Albrechtet et al. (2009); for selected countries in Europe, Arulampalam et al. (2007); for Spain, De la Rica et al. (2008) and for Australia, Kee, (2006). The evidence for Asian countries shows the sticky floor phenomenon (e.g., for Thailand, Fang & Sakellariou 2011; for India, Duraisamy & Duraisamy 2016; and for China, Chi and Li 2008; Millimet and Wang 2006)

[3]Trade unions in Ethiopia are weak regarding both memberships and experience

[4]Ethiopia has issued Labor Law proclaimed in 2003 (Labor Proclamation 377/2003) and preserved labor rights in the constitution to guarantee the rights of workers and employers to form associations and to strengthen and define labor administration. However, the proclamation does not stipulate minimum wages.

The rest of this paper is outlined as follows. Section 2 presents the Ethiopian labor market background, focusing on gender division in the labor market. Section 3 discusses the theoretical background of occupational segregation and its relationship with the gender wage gap. Section 4 describes the data and estimation approach. Section 5 presents the descriptive statistics and the empirical results. Section 6 provides the conclusions of the study.

2 Background

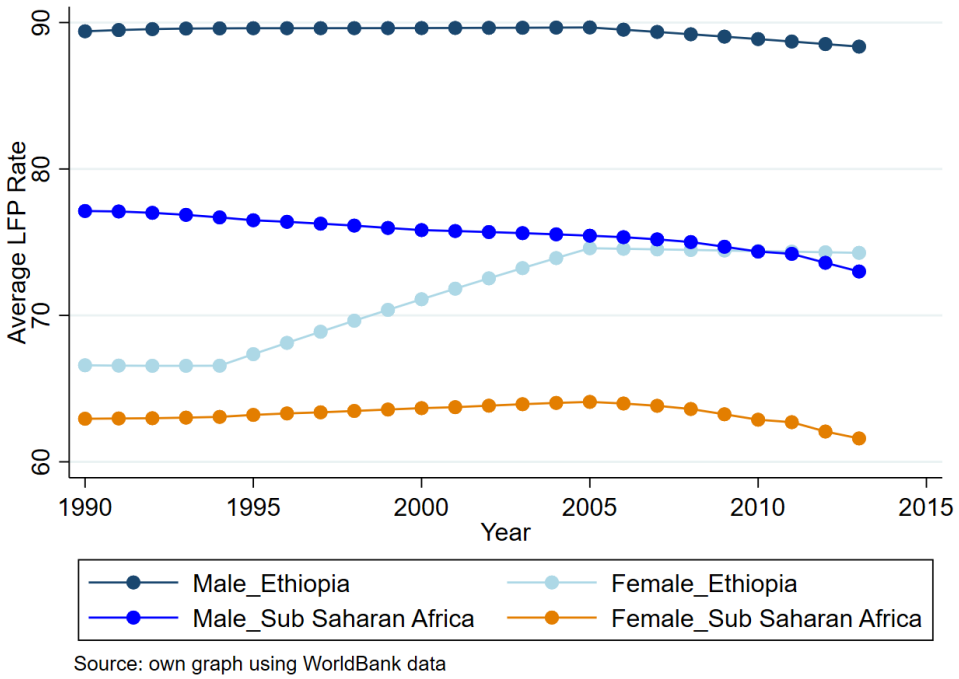
2.1 Women in Ethiopia Labor Market

Ethiopia is the second-most populous nation in Africa, with an estimated population of 95.39 million inhabitants in 2013[5] and one of the fastest-growing economies globally (Berhanu & Poulton 2014). In 2013, more than 53 percent of the population was aged between 15 and 64 years, indicating a high share of the working-age population. The overwhelming fact of the labor market in Ethiopia is the rapid growth of the labor supply because more young people enter the workforce each year. The 2013 labor force survey indicates that about 76.2 percent of people aged ten and older are employed, with females having lower employment rates of 69.8 percent compared to 82.7 percent of the male population. Most labor force participation is in the agricultural and informal sectors, characterized by underemployment, low earnings, and lack of social protection. Figure 1 presents the average labor force participation in Ethiopia and the other SS countries by gender. In Ethiopia, female labor force participation increased from 72% in 1999 to 77% in 2005 and slightly decreased to 76 % in 2013. Like other African countries, many working women engage in informal self-employment and unpaid family labor.

Figure 2 presents the distribution of employment status by gender. Looking at wage employment in Ethiopia, only less than 60% of males aged (15-65 years old) and 45% of females have paid jobs. The share of unemployed and inactive females is higher than males of the same age. In many developing countries, female educational attainment levels have improved over the past decades (Klasen 2018; Gaddis & Klasen 2014). For instance, the enrollment of girls and women in primary school increased to 94.9% in 2014 compared to 43.2 % in 2000. The fertility rate declined from 7.4 % births per woman in 1990 to 4.9 % births per woman in 2015 in Ethiopia (WB 2020). Despite the rise in female education and

[5]The Ethiopian population in 2020 is estimated 114,96 m (UN 2019)

Figure 1: Labor force participation rate by gender



Source: own graph using WorldBank data

Note: female LFPR measured as % of female population ages 15-64 and male LFPR is % of male population ages 15-64.

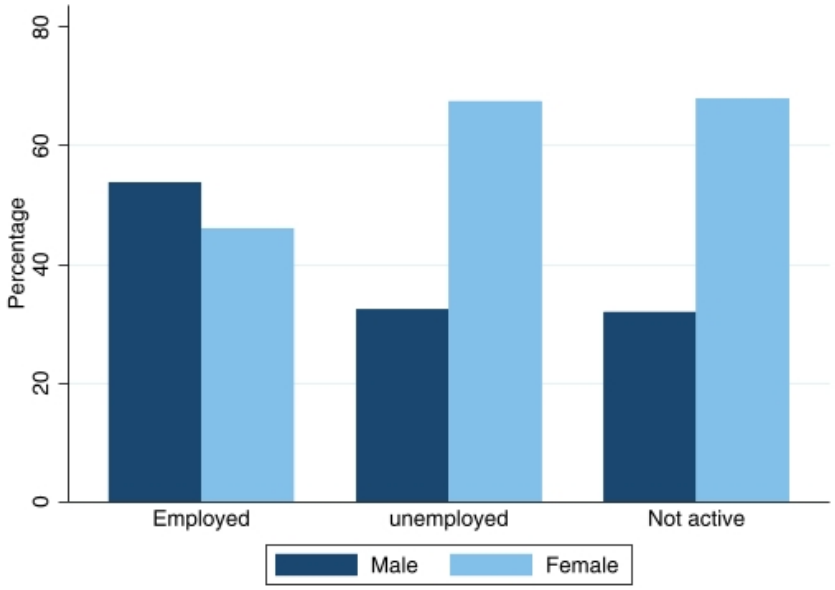
declining fertility rates, women do not have equal economic opportunities as men. The global gender gap index indicates that Ethiopian women are, on average, 38% (0.619 indexes) less likely to have equal opportunities as men (WEF 2013).[6] Similarly, according to the Africa gender equality index, Ethiopia scored below the average in the continent with 50.1, and the average score for Africa is 54.1[7](ADB 2015).

In the formal employment sector, women are disproportionately engaged in labor-intensive industries such as textile firms and perform jobs like assistant, clerical, and elementary jobs, often considered low-paying jobs. For example, among women who work in textile firms, 60 percent and 95 percent of women engage in the cutting and sewing stage, respectively, and receive a lower wage compared to other jobs within a firm. Only 15 percent of women work in the finishing stage (Hailu et al.2018). Even those who have formal wage employment are segregated into particular types of occupations that are perceived

[6]The Index benchmarks national gender gaps on economic, political, education, and health criteria and provides country rankings that allow for effective comparisons across regions and income groups and over time.

[7]The Africa Gender Equality Index measures gender equality across three dimensions: equality in human development, equality in economic opportunities and equality in law and institutions. The index measured from 0 to 100 on the scale, with 100 representing perfect gender equality and South Africa, Rwanda, Namibia, Mauritius, and Malawi are the top five countries that score the highest Gender Equality Index

Figure 2: Gender difference in labor force participation in Ethiopia



Source: own visualization using Ethiopia LFS 2013.

as women's jobs. The report from the Ministry of Women Affairs indicates that women represent 32% of permanent employees in the public sector and concentrate on routine and low-paying occupations (MoWA 2006).

In the past few decades, the government has shown political commitment toward gender equality and women empowerment through the announcement of the National Policy on Women to create an appropriate structure in the government system so that public policies are gender-sensitive in all sectors[8]. However, the Ethiopian labor law does not mandate equal remuneration for work of equal value, even if the law does not allow employment discrimination by sex.

3 Theory of Occupational Segregation by Gender

In this section, I discuss two broad potential mechanisms for why an occupation with a high share of female workers pays lower wages and its implication on the gender wage gap. I then formulate a research hypothesis based on the theories that can be tested using the data.

[8]The importance of gender equality has been emphasized in the 1995 Federal Constitution of Ethiopia (Article 35) and Labor Law Proclamation, stating no discrimination against women regarding employment—also, Millennium Development Goals (MDGs third goal) aimed at reducing gender inequalities

3.1 Human Capital Theory

Ever since the development of human capital theory by (Becker, 1962), investment in human capital accumulation becomes the center of explanation for a group difference in the labor market. According to this theory, women and men have different comparative advantages in household production, namely that women concentrate on labor supply at home and men in the labor market. Women choose less skill-demanding and lower-paying jobs than men with equal levels of human capital (Becker 1985) because of household responsibilities. In a similar vein, (Polachek 1981) claims that women rationally self-select into low-paid occupations due to occupation-specific levels of atrophy and that women experience an interruption of career due to childbearing and household responsibility.

Polachek claims that as women anticipate career interruption, they invest less in human capital than men, which could prevent them from having access to high-paying occupations. Women then choose occupations where interruptions are less costly. The negative relation between the fraction of women in occupation and wages could also result from differences in preference for amenities. The increase in women's representation in occupation can cause the occupation to introduce more flexible work arrangements, such as the possibility of part-time and shorter hours working in return for lower wages in female-dominated occupations.

Hypothesis 1: *On average, women earn lower than men.*

Hypothesis 1A: *The lower wage of women is explained by differences in human capital and other individual characteristics (such as education, family responsibility, part-time and hours of work.*

In Ethiopia, there is still gender disparity in education in secondary and university-level education despite the recent significant progress in women's enrollment and educational attainment. Considering this fact, one can easily assume that women are rationally choosing lower-paying occupations and thus earn, on average, less than men due to their lower level of human capital accumulation. Besides, in a traditional society such as Ethiopia, child caring and housework are often the job description of women. Women may engage in low-paying occupations due to their lower human capital investment, preference for part-time employment, and greater responsibility for the household, thus earning lower wages.

3.2 Crowding Hypothesis

In contrast to the human capital theory, the crowding hypothesis (Bergmann 1974) argues that women are crowded into low-paying occupations because of employer discrimination. This theory posits that employers discriminate against women in high-paying and highly demanding occupations. As a result, women are crowded into other occupations, typically referred to as "female jobs," which leads to the upward supply of women workforce in female jobs. The over-representation of females in certain occupations leads to a decline in the wages for women and men working in female-dominated occupations.

Employer discrimination against women in employment can be due to negative perceptions of women's occupations. For instance, Goldin (2014) argues that if employers or observers outside an occupation believe that female workers have, on average, lower abilities than male workers, occupations with a high share of women perceived as less skill-demanding jobs than occupations over-represented by male workers. The over-representation of women in occupations leads to a decline in the perceived skill requirement, which can result in lower wages among individuals working in the occupation and contribute to the gender wage gap.

Importantly, societal norms can also shape the types of jobs women are expected to pursue. Like other societies, in Ethiopia, women are viewed as more nurturing and caring, leading them to be steered towards jobs in customer service, domestic servants, or assistance jobs, often rewarded with lower wages rather than more lucrative occupations such as managers and professional jobs. Although the two broad mechanisms are not mutually exclusive, the share of women in occupation inversely affects wages even after accounting for personal and job characteristics.

Hypothesis 2: *The share of women within the occupation has a negative impact on wages for both men and women after accounting for human capital investment and other personal and labor market characteristics*

Hypothesis 2A: *The negative association between the share of women within an occupation and wages is stronger among women than men and contributes to gender wage inequality.*

Hypothesis 3: *Wage inequality between men and women widens at the bottom of the wage distribution; sticky floor effects rather than at the top (glass ceiling effects).*

The *sticky floor* phenomenon is where employees in low-wage percentiles face barriers that prevent them from advancing in the labor market. Particularly women being stuck in low-paying jobs with limited opportunities for upward mobility. As women are crowded into

occupations due to employer discrimination (Taste-based discrimination) in male-dominated and high-paying jobs, female occupational segregation mainly exists in the lower tail of wage distribution. The negative perception of women's occupation can result in the devaluation of work done by women. Hence, the increase in the share of the female workforce in occupation can lead women to perform specific tasks related to customer service or care work and be paid a lower average wage than men for the same job due to the devaluation of work performed by women (England and Hermsen 2000). Thus, compared to men, women have limited access to move up the economic ladder. Furthermore, research suggests that women may be less likely to negotiate for higher salaries or better benefits, which can contribute to being paid less than their male colleagues (Gerhart 1990). Similarly, in the public sector, women perform low-paying occupations with limited opportunities for upward mobility, implying that the gender wage gap is wider at the bottom of the wage distribution than at the top tail of wage distribution.

4 Data and Methodology

4.1 Ethiopian Labor Force Survey

The data I use in this analysis stems from the 2013 Ethiopia Labor Force Survey (LFS). The LFS is a nationally representative household survey that collects information on many individuals from all regional states in Ethiopia representing both urban and rural areas. The 2013 LFS is the third survey round conducted by the (ESS 2013) following the 1999 and 2005 surveys. The survey provides and monitors the characteristics of the economically active population aged ten years and above. One distinguishing feature of the 2013 LFS from its previous version is that it contains detailed information on occupations (two-digit and three-digit categories) based on the international standard classification of occupations.

The 2013 LFS also covers all administration states, unlike the previous version of 1999 and 2005 LFS[9]. In addition, the 2013 LFS contains definitions of various concepts in the data. In this paper, the definition of employment includes a person who has a job but is absent temporarily and has an agreement to return to the job. The survey includes monthly gross income from salaried workers and hours worked in the last seven days. When a respondent has more than one job, only the income from the primary job is considered

[9]LFS 1999 does not provide information on earnings. And it does not cover all districts of regional states such as Afar, Gambella, and the Somali region. LFS 2005, the rural area of Gambella region was not covered

for this analysis.

The dependent variable is the log gross monthly wage. Since the data set includes the number of working hours per week in the main job, the analysis is based on a monthly wage rather than an hourly one. The main interest of the variable is gender, a dummy variable equal to 1 if an employee is female and equal to zero if the employee is observed as male. I compute female occupational segregation using a 2-digit level of occupational classification (36 different occupational categories). Female occupational segregation captures the proportion of female employees in each occupation.

Furthermore, I have included a long list of covariates such as age, age squared, marital status, education level[10], children in the household, residence location (11 broad administrative states), work experience, work experience squared, one digit occupation and industry dummies, permanent employment contract, eight dummies for a place of employment, public sector and migration status. The sample is restricted to individuals aged 15 to 65[11] engaged in wage employment. Thus, the regression analysis does not include self-employed individuals, those in apprenticeships, interns, unpaid family workers, and domestic workers. I limit the sample to the formal and informal employment sectors. Later in the robustness check, I include the unidentified employment sector[12] to see whether the main result holds when controlling for the unidentified employment sector.

4.2 Empirical Strategy

This paper employs unconditional quantile regression introduced by Firpo et al. (2009) to analyze the partial effects of explanatory variables on any unconditional quantile of the outcome variable. Firpo et al. (2009) estimate the Re-centered Influence Function (RIF) of the unconditional quantile of the outcome variable (in this case, the logarithm of monthly wage) on the explanatory variables. As shown in Firpo et al. (2009), RIF regression is similar to standard wage regression except that the dependent variable, Y, is replaced by the RIF of the statistic of interest. Consider $IF(Y; v(Y; v(F_Y)$, the influence function[13] corresponding to an observed monthly wage Y for the distributional statistic of interest is $v(F_Y)$. Adding the statistic $v(F_Y)$ to the influence function yields a RIF, and it is defined

[10]The classification of highest education completed follows the Ethiopian education system.

[11]The CSA classifies the minimum working-age population as ten and above and collects information on an economic characteristic from the population aged ten and above, while the World Bank (2007) classifies the minimum working age as fifteen

[12]Unidentified employment sectors is when employees identify the sector of the economy as neither formal nor informal sector of employment.

[13]The influence functions can be computed for other distributional statistics beyond quantiles.

as: $RIF(Y; v(F_Y) = v(F_Y) + IF(Y; v(F_Y)$.

In the case of quantile, the RIF regression is defined as:

$$RIF(Y; Q_\tau) = Q_\tau + \frac{\tau - 1\{Y \leq Q_\tau\}}{f_Y Q_\tau} \tag{1}$$

where Q_τ is the population quantile of the unconditional distribution of Y, and τ is divided into five quantiles across the wage distribution: 10th, 25th, 50th, 75th, and 90th. And, $f_Y(Q_\tau)$ indicates the probability density estimated at specific point Q_τ using Kernel density. Moreover, $\{Y \leq Q_\tau\}$ corresponds to the influence function, indicating if the wage observation is at or below quantile τ. The conditional expectation of the RIF, given X is defined as the unconditional quantile regression $E[RIF(Y; Q_\tau)|X] = Q_\tau$ corresponds to the marginal effect on the unconditional quantile of a small location shift in the distribution of covariates, holding everything else constant. If the specification of unconditional quantile regression is linear, $E[RIF(Y; Q_\tau)|X] = E(X)\beta_\tau$ then β is estimated using OLS.

The standard wage equation of the RIF-OLS regression can be written as:

$$RIF\Big(Y; Q_\tau\Big) = X_i\beta_\tau + \epsilon_\tau, \quad \tau \in (0; 1) \tag{2}$$

where Y is the natural logarithm of monthly wage, and X is a vector of explanatory variables representing the individual and labor market characteristics for individual i, β_τ is the coefficient β represents the marginal effect of X on the distributional statistic, quantile $Q\tau$ and ϵ_τ is the error term.

4.3 RIF-Decomposition

The OB decomposition is a popular method for examining the wage gap between men and women. This method allows decomposing differences in mean wage into endowment effects and coefficient effects and further dividing the two components into the contribution of each variable. However, the Oaxaca-Blinder decomposition analyzes the outcome difference between the two groups only at the mean level. This method fails to provide insight into the sticky floor and glass ceiling effects.

Extensive existing literature focuses on conditional quantile regression models (e.g., (Buchinsky 1998; Machado and Mata 2005; Melly 2006) to examine gender wage inequality across the wage distribution, most of these approaches do not quantify the contribution of each variable to the decomposition and are computationally intense. Firpo et al. (2018)

proposed RIF decomposition to decompose differences in distributional statistics beyond the mean. The RIF decomposition computes based on unconditional quantile regression. It has several advantages compared to conditional quantile decomposition: obtaining the contribution of covariates on each decomposition component. This methodology is also computationally simpler to implement and interpret.

RIF decomposition of the $\tau$the quantile can be expressed as:

$$E\Big[RIF\big(Y_M;Q_\tau\big)|X_M\Big] - E\Big[RIF\big(Y_F;Q_\tau\big)|X_F\Big] = \overline{X}_M\beta_{M\tau} - \overline{X}_F\beta_{F\tau} \tag{3}$$

$$\overline{X}_M\beta_{M\tau} - \overline{X}_F\beta_{F\tau} = \Big(\overline{X}_M - \overline{X}_F\Big)\hat{\beta}_{F,\tau} + \overline{X}_M\Big(\hat{\beta}_{M,\tau} - \beta_{F,\tau}\Big) \tag{4}$$

where M = *Male* and F= *Female*. As the conventional Oaxaca-Blinder decomposition, the first part in Equation (4) indicates the *endowments effects*, and the second part indicates the *structural effects* for the τ quantile. The standard errors are computed using bootstrap 100 replications.

5 Results

5.1 Descriptive Evidence

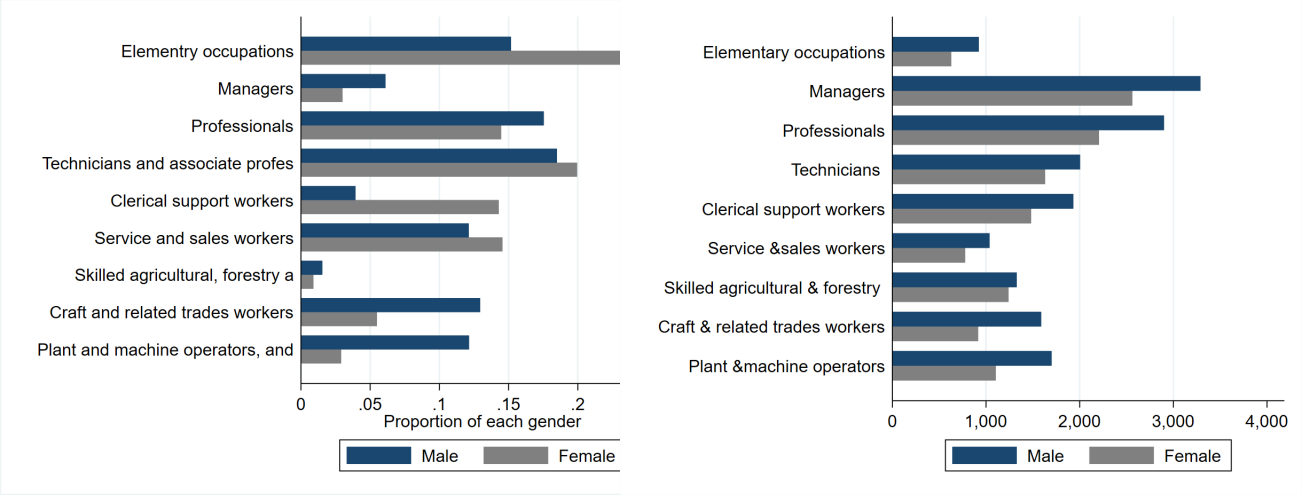
Table (1) presents the summary statistics for the estimation sample. The average monthly wage is 7.2 log points for men and 6.8 log points for women. In other words, women earn, on average, 36.0% (7.216-6.856) lower monthly wages than men. There are also several differences in the characteristics of men and women in the sample. On average, there is about a four-year age difference between male and female employees, and around 45% of women are married compared to 58% of men, and 16% of women are divorced/widowed than only 4% of men in the sample. This may indicate that working women are less likely to engage in marriage, or married women (compared to married men) are less likely to participate in wage employment.

The highest completed education level greatly varies by gender and different types of educational attainment. On average, 18% of women completed primary education, compared to 23% of men. Almost equal shares of women and men have completed middle school. Similarly, about 10.9% of women and 10.8 % of men have completed secondary education. The share of female workers who have completed vocational college is much higher than that of men, with about 34.6% of females compared to 23.6% of men with vocational degrees. On

the contrary, the share of women with a university-level degree is much lower than men. On average, 21% of males have completed university-level education, and only 13% of females have completed a university degree level of education.

The share of women working in the public sector is higher than that of males in the public sector. On average, 56% of women are working in the public sector compared to 54% of men. This difference is statistically significant. Similarly, more than 66.5% of women have permanent work contracts compared to 64.9% of men with permanent contracts. In contrast, women with seasonal or casual terms of work contracts are slightly lower than men. Looking at the distribution of industries by gender, women are mostly engaged in education, social work, and accommodation and service. At the same time, men are mostly overrepresented in the construction, manufacturing, public administration, and transportation sectors of industries. Regarding the place of work, 63% of women and 56% of men carry out their work from the office. A very small share of men and women in the sample work from home. Table A1 in the Appendix provides the definition variables.

Figure 3: Proportion of each gender across occupations (a) and average monthly wage in ETH birr (b)



(a) (b)

Source: Ethiopia LFS 2013 using one-digit occupation classification (nine categories), own calculations.

Before addressing the association between occupational segregation and the gender wage gap, I show the proportion of employed women and men in each occupation and its average wage across occupations by gender (see Figure 2). More than 24 percent of women work in elementary occupations, compared to 15 percent of men. Women are underrepresented in managerial and public administration occupations. On average, 6.1 percent of men work in these occupations, compared to only 3 percent of women. Similarly, 17.5 percent of

men are considered professional workers, compared to 14.5 percent of professional women. In addition, 23 percent of men work as skilled trade, plant, and machine operators compared to only 7 percent of women. Conversely, women are highly overrepresented in service and clerical occupations. Fully 14.3 percent and 14.6 percent of women work in clerical support and service sector occupations, compared to 4 percent and 12 percent of men.

Regarding the average wage difference between men and women, women earn lower monthly wages than men in each occupation. Even when the proportion of women is higher in some occupations, such as elementary and service occupations, the average wage for women is lower than for men. Figure 2 shows that women are overrepresented in low-paying occupations and earn lower monthly wages than men across all occupations.

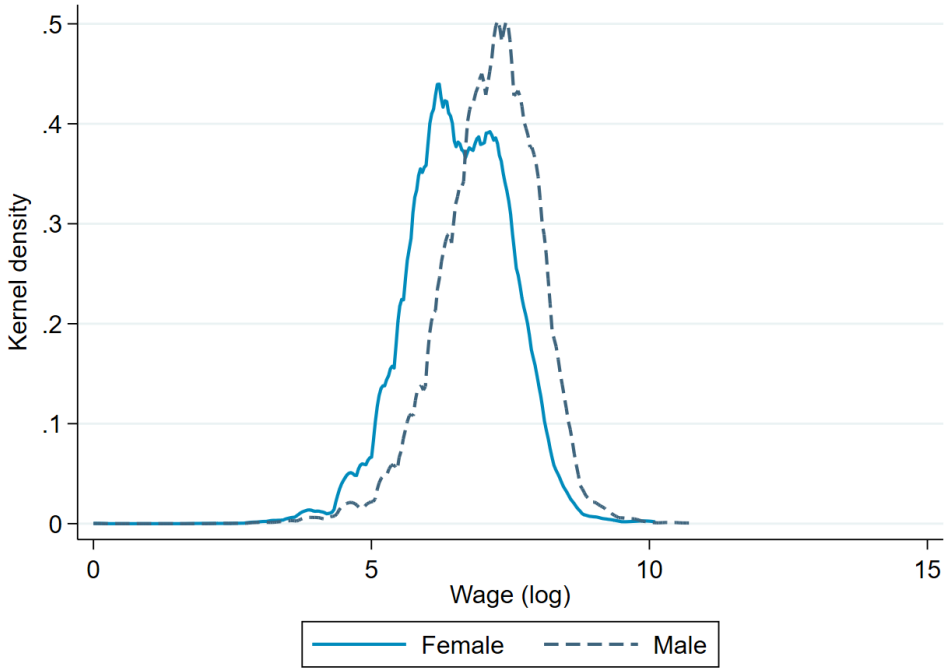
5.2 Baseline Results

Figure 3 presents the female and male wage distribution using the nonparametric epanechnikov kernel density function. The male kernel wage density tends to show the rightward transition across the entire distribution, which implies that the earnings of males are relatively higher than females, and the gap between the male and female densities represents the gender wage gap. According to the summary statistics, the average monthly wage for men is 7.216 log points, and women receive 6.856 log points of monthly wage on average. which is also reflected in Figure 3. The overall gender wage inequality is 36%, favoring men (7.216-6.856 = 0.360). This unadjusted gender wage inequality in Ethiopia is higher than in previous studies from other African countries. For instance, Nordman & Wolff, (2009) show 24% unadjusted wage gap for the manufacturing sector in Morocco and Mosomi (2019) find 16% of the gender wage gap in South Africa[14]. Figure 4 plots the effect of being female on log monthly wages using unconditional quantile regression methods. The partial effect from the unconditional quantile regression is highly nonmonotonic, and the magnitude of the gender wage gap depends on the specific percentile level.

Table (2) reports the baseline result for the determinants of monthly wages for a combined sample of females and males. The estimation employs Heckman's two-stage selection procedure and the standard OLS regression method. It is well known that labor force participation is not random, especially for women. Thus, wage regression using a nonrandom

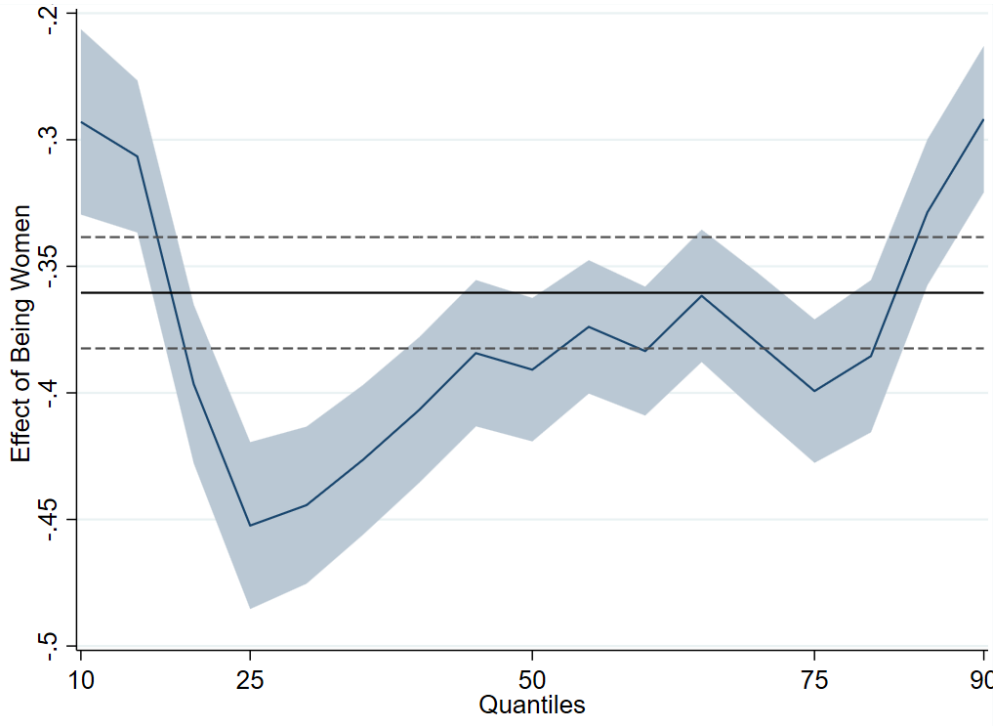
[14]This implies that wage-employed women in South Africa have better human capital characteristics than men, and contrary to previous literature, the wage gap at the mean narrowed from 40 percent in 1993 to 16 percent in 2014

Figure 4: Kernel density function of monthly wage (log)



Source: Own graph using 2013 LFS, Ethiopia.

Figure 5: Unconditional quantile estimates of the effect of women on Log monthly wages



Notes: Unadjusted gender wage gap across unconditional wage distributions.

sample may suffer from selectivity bias because wages are observed only for working individuals. Heckman (1979) two-stage procedure tackles the problem of a nonrandom sample section and produces consistent wage estimation using the conditional mean models. In the first stage, the probability of being in labor force participation as a function of the control variable and additional identifying variables is performed using the probit model. Member of household and having children under the age of 5 are used as instrument variables, assuming the small children and household size affect the employment probability directly but not the wage equation. In the second stage, the inverse of the Mills' ratio is included in the log monthly wage equation. The lambda term in this exercise is negative and significant, which suggests that the error term in the selection and wage equations are negatively correlated and quantitatively significant. A potential explanation for the negative selection of women in wage employment could be that non-economic factors play a bigger role in the participation decisions of women in Ethiopia.

In Table (2), column (1) includes control variables that determine the earnings of male and female workers, such as age, age squared, marital status, education, permanent or contract employment, number of working hours per week, public sector, work experience, one digit occupation and industry dummies, being an internal migrant, and ten regional state dummies. The gender wage gap is captured by the estimated coefficients of the gender dummy, and the estimation result shows that women earn 15.5% lower monthly wages than men after accounting for personal and labor market characteristics. This finding is inconsistent with Hypothesis 1A. As such, the baseline result reveals that the gender wage gap is not fully explained by differences between men and women in socio-demographic and labor market characteristics, in particular, education, experience, children in the household, and the number of working hours.

Column (2) subsequently included the variable for female occupational segregation in the regression. The results show that female occupational segregation is negatively correlated with earnings. I find that a 10 percentage point increase in female occupational segregation decreases wages on average by 24.5% for both male and female employees. The magnitude of the gender wage gap is reduced to 13.7% from 15.5% (see column 2 of Table 2). Moreover, the negative association between female occupational segregation and wages is stronger among women than men. This can be interpreted as a 10 percentage point rise in the share of female workers in an occupation, correlated with 29% lower wages for women compared to 23% for men (columns 3 and 4 of Table 2).

For comparison purposes, column (5) presents the estimated coefficient from the OLS method without Heckman selection. According to standard OLS estimation, women earn 16% lower monthly wages than men, slightly higher in magnitude than the Heckman two-stage estimation method. The finding from Table (2) is consistent with the crowding hypothesis that argues the negative correlation between the increase in the share of female workers in occupations and the average earnings, holding all other factors constant.

Furthermore, many control variables have significant coefficients that align with previous studies. Earnings increase with age, the number of hours worked, and level of education; completing secondary, upper secondary, vocational, and university level education (compared to no education) is associated with higher wages for both men and women workers. The returns are higher for university-level education. However, having non-formal education associated with lower average earnings for the male subsample, the coefficient is negative and insignificant for the female subsample.

Table A2 in the Appendix shows results from the OB decomposition. The decomposition reports that a significant gender gap in monthly wages exists in the Ethiopian labor market. The raw difference between the male and female logs of monthly earnings is 0.360. Of this difference, 24 percentage points (56%) is attributed to differences in characteristics across genders. The remaining substantial portion of 12.1 percentage points differences is due to wage structural effects. This means that 34% of the wage differential is due to women's remuneration for the same characteristics as men. This structural effect difference represents discrimination against women. It could also be due to other unexplained factors, such as personality characteristics, that I can not observe in the data set. Looking at specific variables, gender differences in occupational segregation account for most of the explained portion of the gender wage gap.

5.3 Main Results

Table (3) presents the estimation results of the wage regression using the unconditional quantile model. So far, there is little consensus on the sample selection procedures in unconditional quantile regression, and there is no available econometric method to tackle the sample selection problem. In addition, the estimation result in Table (2) with and without Heckman two-stage selection method is similar. Therefore, I tend not to consider the sample selection issue in the unconditional quantile regression and RIF decomposition method. I begin by estimating the model without including the variable for female occupational segre-

gation. I repeat the exact specification, adding control for female occupational segregation. The estimated quantile regression outcome was reported at the wage distributions of the 10th, 25th, 50th,75th, and 90th percentiles. Panel A of Table (3) shows the result without the female occupational segregation variable. I find that women significantly earn lower monthly earnings than men across the whole wage distribution, even after controlling for differences in personal, human capital, and job characteristics. The negative effect of females on log monthly earnings increases from the bottom to the 25th percentile and then decreases thereafter sharply.

Panel B of Table (3) presents the regression result, including the variable for female occupational segregation. The result from Table (3) in panel B shows that women earn lower monthly wages than men across the wage distribution. After considering female occupational segregation, the gender wage gap is narrowed at the bottom and middle of the wage distribution. For instance, the gender wage gap is equal to 13% at the 10th percentile, compared to 16.4% without controlling for occupational segregation. Similarly, the estimated gender wage gap at the 25th percentile is now equal to 23.7% compared to 29% of the wage gap in panel A, indicating that female occupational segregation partly explains the gender wage gap at the bottom and 25th percentile of the wage distribution.

Moreover, I find that female occupational segregation is negatively associated with earning across the wage distribution (except at the 90th percentile). This negative effect is more pronounced from the 10th to the 50th percentile. On the contrary, I find no evidence of the negative effect of female occupational segregation on earning at the upper part of the wage distribution. The negative association between female occupational segregation and the earnings of employees supports Hypothesis 2 to the extent that female occupation segregation negatively impacts earnings at lower and middle levels of unconditional wage distribution.

The results in Table (3) show that the gender wage gap is wider at the 25th and median levels of the wage distribution than at the top end of the percentile. I find no evidence of sticky floor effects or the glass ceiling effects in Ethiopia. This finding does not support Hypothesis 3 of this paper and is not in line with the previous studies in African countries (for example,Nordman and Wolff (2009); **?** The estimation result suggests that female employees are less likely to receive the same wage as men and have fewer opportunities to be promoted to jobs with higher responsibilities, even if they have the same educational distribution as male employees. Overall, the result from Table (3) indicates that the estimation of the

gender wage gap across pay distribution differs from the mean estimation; the latter method masques the gender difference in wage across different wage distributions.

Table (4) presents quantile wage regressions for women and men separately. For the women subsample, the result shows that female occupational segregation negatively correlated with earnings across the unconditional distribution. The unconditional effect of female occupational segregation on log monthly earnings increases from the bottom to the 25th percentile and decreases afterward sharply. For the men sub-sample, while I find a similar pattern of results at the bottom of the wage distribution, I find no significant evidence of the correlation between female occupational segregation and earnings at the top of the wage distribution.

The magnitude of this negative correlation increases at the lower tail of wage distribution for both men and women. The important feature of this table is the negative influence of occupational segregation on wages is more pronounced among women than men. A 10 percentage point increase in the share of females in occupation is correlated with a reduction of wages by 36% for women and 21% for men at the 50th percentile.

5.4 RIF Decomposition Results

Table (5) shows the RIF decomposition outcome at the 10th, 25th, 50th, 75th, and 90th quantiles. As shown in equation (4), the gender wage gap is decomposed into three parts. The overall wage difference, the part attributes due to differences in characteristics (endowment) effects, and the difference in structural (return to characteristics) effects across the entire wage distribution.

The result from RIF decomposition shows that the total difference between men and women is highest at the 25th percentile of the wage distribution. The decomposition reveals that the gender wage disparity varies across the percentile of the wage distribution. This variation is particularly true at the bottom and upper part of the wage distribution. Moreover, the contribution of the difference in endowment effect increases from the 10th percentile until the 25th percentile level. After slightly decreasing at the median of the wage distribution, it again increases as we move to the top of the wage distribution and remains quantitatively important at each estimated point. The findings indicate that differences in characteristics between men and women account for a substantial portion of the gender wage gap at the top of the wage distribution. This explained components attributed to 26% of the gender wage gap at the 10th percentile and 80.5% of the gap at the 90th percentile. On

the contrary, the wage difference in return to characteristics increases at the bottom end of the wage distribution and decreases afterward. The structural effects account for about 74% of the gender wage gap at the 10th percentile and 19.4% of the gap at the 90th percentile. At the median, I find that 67% of the gender wage gap is attributable to differences between men and women in return to characteristics. The increasing structural effects at the lower tail of wage distribution imply that discrimination against women concerns low-paid working women more than high-paid working women, and women enter the labor market with low pay and few advancement opportunities in Ethiopia.

Furthermore, female occupational segregation contributes to the endowment effects of gender wage differential across the wage distribution. However, the difference in the structural effect of female occupation segregation seems to reduce the gender wage gap at the lower tail of wage distribution (-0.062 at 10th and -0.092 at 25th percentile of wage distribution). Overall, the RIF decomposition suggests differences in return to characteristics between men and women are highest and explain the substantial part of the gender wage gap at the lower part of the wage distribution, suggesting evidence of sticky floor effects. Differences between men and women in characteristics explain the gender wage gap at the top of the wage distribution.

5.5 Heterogeneity Effects

Table (6) presents quantile wage regression for the public and private sectors separately. The result confirms gender wage differences across the entire wage distribution in both public and private sectors. In the public sector, the partial effect from the unconditional quantile regression is highly nonmonotonic. The gender wage gap decreases as we move from the bottom to the median of the wage distribution and then increases slightly at the top wage distribution. The finding reveals that the gender wage gap is wider at the bottom of the wage distribution, which is a sign of the sticky floor effect. Similarly, female occupational segregation has a negative and significant coefficient across the wage distribution, but this negative effect is insignificant at the 75th and 90th percentile. The negative effect of female occupational segregation on earnings is highest at the bottom of the wage distribution.

This finding differs substantially from the private sector. First, the gender wage gap is lowest at the bottom of the wage distribution in the private sector. The results show that the gender wage gap in the private sector is higher at the median of wage distributions than at the top of the wage distribution, indicating no evidence of a sticky floor or glass ceiling effect. Second, female occupational segregation has a negative effect on the unconditional distribution of wages but not

at the top of the wage distribution. Unlike in the public sector, the negative effect is highest in the median. The heterogeneity analysis reveals that the gender wage gap is higher in the private sector than in the public sector except at the bottom of the wage distribution. For example, in the private sector, women earn 32% lower than men at the 50th percentile, and this gap is only 10.7% in the public sector. This finding is in line with previous evidence by Appleton et al. (1999), using the OLS regression method, found that women earn 56% lower wages than men in the private sector while this gap is about 18 percent in the public sector of the Ethiopian urban labor market. On the contrary, Said et al. (2022) found evidence of glass ceiling effects in the public sector and sticky floor effects in the private sector using the RIF unconditional quantile regression method in the Egyptian labor market.

5.6 Robustness Checks

In addition to heterogeneity analysis, I present a series of tests that increase the confidence of the result in the main analysis. Following Leuze & Strauß (2016), I classify occupations into gender-typical occupations as an alternative measurement of female occupational segregation. Female-dominated occupations are defined as those where more than 70% of workers are women, and male-dominated occupations where less than 30% are women workers, and the other occupations are considered integrated occupations. Table A3 presents the results for a pooled sample and the by gender separately.

The upper panel of Tabel (A3) presents the estimation result of wage regression for a combined sample of men and women using the unconditional quantile regression. The estimated coefficient shows that women earn lower monthly wages than men across the unconditional wage distribution. The magnitude of the gender wage gap widened at the median and lower tail of wage distribution. The effect of female-dominated and integrated occupation has negative and significant coefficients across different percentiles except at the top of the wage distribution. This negative effect is highly pronounced at the lower tail of the distribution. The negative coefficient of female-dominated occupations is much higher than that of integrated occupations. As such, female-dominated occupations are associated with around 15% lower monthly wages at the median. In comparison, integrated occupations are correlated with 9.2% lower wages than male-dominated occupations. Moreover, the estimation result shows a similar pattern for male and female subsamples.

Table (A3) shows that women earn lower wages across the entire distribution than men with similar characteristics and earn lower wages in female-dominated and integrated occupations than in male-dominated occupations. This finding confirms Hypothesis 2 and 2A of this study and aligns with the concept of devaluation of women's work (Cohen and Huffman 2003). Furthermore,

the finding reveals there is no significant relationship between female-dominated occupations and earning at the top of unconditional wage distribution for the male subsample.

The result in Table (A3) is consistent with the main estimation in Table (3) and highlights two important conclusions. First, the female coefficient has a negative and significant correlation with earnings across the wage distribution. Second, female-dominated and integrated occupation has a negative effect at the bottom and median of the wage distribution. In fact, women who work in integrated occupations have higher wages than in male-dominated occupations at the top of the wage distribution. Hence, the negative effect of female-dominated and integrated occupations is only observed at the bottom and middle of wage distribution for both men and women. The gender wage gap is highest at the 25th percentile, evidence of sticky floor effects in Ethiopia's labor market.

6 Conclusions

Occupational segregation by sex explains a significant part of the wage differential between women and men in the labor market. Despite the abundant empirical evidence on gender wage inequality in almost all industrial countries, few studies are still conducted on this important topic in Africa. In addition, the relationship between female occupational segregation and earnings in developing economies, including Ethiopia, has not been well documented.

Using the 2013 labor force survey, this paper sheds light on the role of occupational segregation in explaining the gender wage gap across different wage distributions in Ethiopia, making three crucial contributions. First, I contribute to the limited literature on the gender wage gap in the context of developing countries, in particular in Ethiopia. Second, I add to the literature on the relationship between female occupational segregation and wages by testing the crowding theory that argues that discrimination against women in the labor market pushed them into low-paying occupations, ultimately contributing to the gender wage gap. Third, I contribute to the literature that yields mixed results regarding the glass ceiling and sticky floor effects by employing the unconditional quantile regression based on the recentered influence function and decomposition method to quantify the gender wage differentials, particularly on the impact of female occupational segregation on gender wage inequality across the different wage distributions in Ethiopia. Finally, I provide heterogeneity analysis for the private and public sectors.

The result shows that women earn lower monthly wages than men throughout the distribution. This finding holds with and without female occupational segregation. Most importantly, the increased share of women in occupation has a significant and negative impact on the wages for both men and women except at the top of the wage distribution. This negative correlation is

higher among women. The estimation further shows the gender wage gap is higher at the lower tail of wage distributions than at the top. The gap is wide at the 25th percentile of wage distribution. The finding suggests evidence of the sticky floor effect for the public sector. However, I find no evidence of the sticky floor and glass ceiling effect for the private sector in Ethiopia. The results are robust to different strategies and measures of female occupational segregation. The result suggests that women at the lower tail of the distribution face higher discrimination than those at the top. Women could also have lower wage bargaining power than men due to differences in personality traits that I cannot observe due to data limitations.

This paper suggests that much effort is required to tackle employer discrimination against women in the job hiring stage, ensure the improvement of women's occupation through the distribution of women in male-dominated occupations, and mitigate the inefficiencies in the labor market. The estimation result suggests that a targeted policy to increase the number of women in management positions through promotions and upward mobility can help narrow the gender wage gap in the lower part of the wage distribution. Moreover, introducing a minimum or living wage for low-paid workers could narrow the gender wage gap at the bottom of the wage distribution.

I conclude this paper with some remarks for future research. More recent evidence is vital to examine the relationship between occupational segregation and the gender wage gap using data from other developing countries. Moreover, panel data is vital to observe the same individual over time to see whether there is a shift from a female-dominated occupation to a male-dominated occupation and if there is a reduction of the gender wage gap due to the shift in occupation. Recent and detailed information on the labor market and personality characteristics are crucial to providing up-to-date empirical evidence on gender wage inequality. Finally, the study highlights the importance of further investigating the wage gap across unconditional wage distributions in Africa.

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The author declares that there is no conflict of interest.

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References

Abegaz, M. and Nene, G. (2023). Gender wage and productivity gaps in the Ethiopian manufacturing sector. *Journal of Applied Economics*, 26(1):2160139.

ADB (2015). Empowering African Women: An Agenda for Action. Published by Africa Development Bank. https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/African_Gender_Equality_Index_2015-EN.pdf.

Agesa, R. U., Agesa, J., and Dabalen, A. (2013). Sources of the persistent gender wage gap along the unconditional earnings distribution: findings from Kenya. *Oxford Development Studies*, 41(1):76–103.

Albrecht, J., Björklund, A., and Vroman, S. (2003). Is there a glass ceiling in Sweden? *Journal of Labor Economics*, 21(1):145–177.

Albrecht, J., Van Vuuren, A., and Vroman, S. (2009). Counterfactual distributions with sample selection adjustments: Econometric theory and an application to the Netherlands. *Labour Economics*, 16(4):383–396.

Appleton, S., Hoddinott, J., and Krishnan, P. (1999). The gender wage gap in three African Countries. *Economic Development and Cultural Change*, 47(2):289–312.

Barón, J. D. and Cobb-Clark, D. A. (2010). Occupational segregation and the gender wage gap in private-and public-sector Employment: a Distributional Analysis. *Economic Record*, 86(273):227–246.

Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy*, 70(5, Part 2):9–49.

Becker, G. S. (1985). Human capital, effort, and the sexual division of labor. *Journal of Labor Economics*, 3(1, Part 2):S33–S58.

Bergmann, B. R. (1974). Occupational segregation, wages, and profits when employers discriminate by race or sex. *Eastern Economic Journal*, 1(2):103–110.

Berhanu, K. and Poulton, C. (2014). The Political economy of agricultural extension policy in Ethiopia: Economic growth and political control. *Development Policy Review*, 32(s2).

Bhorat, H. and Goga, S. (2013). The gender wage gap in post-apartheid South Africa: A re-examination. *Journal of African Economies*, 22(5):827–848.

Blau, F. D. and Kahn, L. M. (2017). The gender wage gap: extent, trends, and explanations. *Journal of Economic Literature*, 55(3):789–865.

Blinder, A. S. (1973). Wage discrimination: reduced form and structural estimates. *Journal of Human resources*, pages 436–455.

Borrowman, M. and Klasen, S. (2020). Drivers of gendered sectoral and occupational segregation in Developing Countries. *Feminist Economics*, 26(2):62–94.

Buchinsky, M. (1998). Recent advances in quantile regression models: a practical guideline for empirical research. *Journal of Human Resources*, pages 88–126.

Caliendo, M. and Wittbrodt, L. (2022). Did the minimum wage reduce the gender wage gap in Germany? *Labour Economics*, 78:102228.

Chernozhukov, V., Fernández-Val, I., and Melly, B. (2013). Inference on counterfactual distributions. *Econometrica*, 81(6):2205–2268.

Chzhen, Y. and Mumford, K. (2011). Gender gaps across the earnings distribution for full-time employees in Britain: allowing for sample selection. *Labour Economics*, 18(6):837–844.

Cohen, P. N. and Huffman, M. L. (2003). Occupational segregation and the devaluation of women's work across US labor markets. *Social Forces*, 81(3):881–908.

Cortes, P. and Pan, J. (2018). Occupation and gender. *The Oxford Handbook of Women and the Economy*, pages 425–452.

England, P. and Hermsen, J. M. (2000). The devaluation of women's work: A comment on Tam. *American Journal of Sociology*, 105(6):1751–1760.

ESS (2013). Ethiopian Labor Force Survey 2013. https://www.statsethiopia.gov.et/ [Ethiopian Statistical Service (ESS)].

Fafchamps, M., Söderbom, M., and Benhassine, N. (2009). Wage gaps and job sorting in African manufacturing. *Journal of African Economies*, 18(5):824–868.

Firpo, S., Fortin, N. M., and Lemieux, T. (2009). Unconditional quantile regressions. *Econometrica*, 77(3):953–973.

Firpo, S. P., Fortin, N. M., and Lemieux, T. (2018). Decomposing wage distributions using recentered influence function regressions. *Econometrics*, 6(2):28.

Gaddis, I. and Klasen, S. (2014). Economic development, structural change, and women's labor force participation: A reexamination of the feminization hypothesis. *Journal of Population Economics*, 27:639–681.

Gerhart, B. (1990). Gender differences in current and starting salaries: The role of performance, college major, and job title. *ILR Review*, 43(4):418–433.

Goldin, C. (2014). A pollution theory of discrimination: male and female differences in occupations and earnings. In *Human Capital in History: The American record*, pages 313–348. University of Chicago Press.

Gradín, C. (2021). Occupational gender segregation in post-apartheid South Africa. *Feminist Economics*, 27(3):102–133.

Groshen, E. L. (1991). The structure of the female/male wage differential: Is it who you are, what you do, or where you work? *Journal of Human Resources*, pages 457–472.

Hailu, Y., Tilaye, A., Worku, I., Birhanu, M., and Daniel, S. (2018). A Study on women in manufacturing in Ethiopia: opportunities, challenges & strategic interventions. *Addis Ababa: Ministry of Trade and Industry and UNDP Ethiopia*.

Heckman, J. (1974). Shadow prices, market wages, and labor supply. *Econometrica: Journal of the Econometric Society*, pages 679–694.

Hegewisch, A., Liepmann, H., Hayes, J., and Hartmann, H. (2010). Separate and not equal? gender segregation in the labor market and the gender wage gap. *IWPR Briefing Paper*, 377:1–16.

Kibru, M. (2012). Employment challenges in Ethiopia. *Addis Ababa University, Ethiopia*.

Klasen, S. (2018). The impact of gender inequality on economic performance in Developing Countries. *Annual Review of Resource Economics*, 10:279–298.

Koenker, R. and Bassett Jr, G. (1978). Regression quantiles. *Econometrica: Journal of the Econometric Society*, pages 33–50.

Kolev, A. and Robles, P. S. (2010). Addressing the gender pay gap in Ethiopia: How crucial is the quest for education parity? *Journal of African Economies*, 19(5):718–767.

Levanon, A., England, P., and Allison, P. (2009). Occupational feminization and pay: Assessing causal dynamics using 1950–2000 US census data. *Social Forces*, 88(2):865–891.

Machado, J. A. and Mata, J. (2005). Counterfactual Decomposition of Changes in Wage Distributions using Quantile Regression. *Journal of Applied Econometrics*, 20(4):445–465.

Melly, B. (2005). Decomposition of differences in distribution using quantile regression. *Labour Economics*, 12(4):577–590.

Melly, B. (2006). Estimation of Counterfactual Distributions using Quantile Regression.

Morrison, A. and Morrison, A. R. (2007). Gender equality, poverty, and economic growth. *Policy Research Working Paper*, (4349).

Mosomi, J. (2019). *Distributional changes in the gender wage gap in the post-apartheid South African labor market*. Number 2019/17. WIDER working paper.

MoWA (2006). National action plan for gender equality (NAP-GE): Published by Ministry of Women Affairs. https://land.igad.int/index.php/documents-1/countries/ethiopia/legislation-and-policies-1/policies-1/271-national-action-plan-for-gender-equality-nap-ge/file.

Nordman, C. J. and Wolff, F.-C. (2009). Is there a glass ceiling in Morocco? evidence from matched worker-firm data. *Journal of African Economies*, 18(4):592–633.

Ntuli, M. (2009). Exploring gender wage "discrimination" in South Africa, 1995–2004: A quantile regression approach. In *Labor Markets and Economic Development*, pages 498–525. Routledge.

Oaxaca, R. (1973). Male-female wage differentials in Urban labor markets. *International Economic Review*, pages 693–709.

Polachek, S. W. (1981). Occupational self-selection: A human capital approach to sex differences in occupational structure. *The Review of Economics and Statistics*, 63:60–69.

Said, M., Majbouri, M., and Barsoum, G. (2022). Sticky floors and glass ceilings: gender wage gap in Egypt. *Feminist Economics*, 28(4):137–165.

Sorensen, E. (1990). The crowding hypothesis and comparable worth. *Journal of Human Resources*, pages 55–89.

Temesgen, T. (2006). Decomposing gender wage differentials in urban Ethiopia: Evidence from linked employer-employee (LEE) manufacturing survey data. *Global Economic Review*, 35(01):43–66.

WB (2020). The global gender gap report: Published by the World Bank. https://data.worldbank.org/indicator/SE.PRM.ENRR.FE?locations=ET.

WEF (2013). The global gender gap report: Published by World Economic Forum. https://www.weforum.org/publications/global-gender-gap-report-2013/.

Weichselbaumer, D. and Winter-Ebmer, R. (2005). A Meta-analysis of the international gender wage gap. *Journal of Economic Surveys*, 19(3):479–511.

Table 1: Descriptive statistics of the estimation sample

	Female		Male		Diff.in mean
	Mean	Std.dev	Mean	Std.dev	(col 3 -col 1)
	(1)	(2)	(3)	(4)	(5)
Log monthly wage	6.856	0.783	7.216	0.806	0.360***
Female occupational segregation	0.525	0.226	0.330	0.219	-0.195***
Working hours	41.653	17.780	46.176	19.313	4.523***
Age	30.944	9.368	34.453	10.879	3.508***
Married	0.456	0.498	0.586	0.492	0.130***
Divorced or widowed	0.161	0.367	0.043	0.204	-0.117***
Permanent employee	0.665	0.472	0.649	0.477	-0.016**
Seasonal employee	0.107	0.309	0.134	0.341	0.027***
Work experience	6.857	7.793	8.827	9.058	1.970***
Internal migrant	0.528	0.499	0.602	0.489	0.075***
Public sector	0.563	0.496	0.540	0.498	-0.023***
Formal employment	0.981	0.135	0.976	0.154	-0.006**
Primary school	0.180	0.384	0.227	0.419	0.046***
Junior school	0.145	0.352	0.147	0.354	0.001
Secondary school	0.109	0.312	0.108	0.310	-0.001
Vocational collage	0.346	0.476	0.236	0.424	-0.110***
University degree	0.132	0.339	0.212	0.409	0.079***
Nonformal education	0.006	0.080	0.013	0.113	0.006***
Occupation: Eight one-digit occupation dummies.					
Managers	0.030	0.172	0.062	0.240	0.0313***
Professionals	0.146	0.353	0.176	0.381	0.030***
Technicians and assistant	0.202	0.401	0.186	0.389	-0.016***
Clerical support	0.144	0.351	0.039	0.195	-0.105***
Service and sales	0.144	0.351	0.121	0.326	-0.023***
Skilled agriculture	0.009	0.094	0.015	0.123	0.006
Craft and related personal	0.054	0.226	0.129	0.335	0.075***
Plan and machine operators	0.029	0.168	0.121	0.327	0.092***
Industry: Sixteen one-digit industry dummies.					
Mining and quarrying	0.007	0.083	0.011	0.105	0.004***
Manufacture	0.107	0.309	0.136	0.343	0.028***
Electricity, gas and steams	0.003	0.057	0.009	0.099	0.007***
Water supply and sewerage	0.016	0.125	0.013	0.113	-0.003*
Construction	0.059	0.237	0.122	0.327	0.062***
Wholesale and retail trade	0.059	0.236	0.049	0.216	-0.009***
Transportation and	0.017	0.129	0.085	0.278	0.068***
Accommodation and food service	0.086	0.279	0.027	0.163	-0.058***
Information and communication	0.019	0.138	0.017	0.129	-0.003
Financial and insurance	0.048	0.214	0.040	0.197	-0.008
Professional and technical consulting	0.038	0.191	0.039	0.193	0.0009
Administrative and support	0.045	0.207	0.033	0.180	-0.011
Public administration	0.094	0.292	0.104	0.305	0.009***
Education	0.211	0.408	0.165	0.371	-0.047***
Human health social work	0.097	0.296	0.047	0.212	-0.050***
Other service activities	0.052	0.222	0.053	0.223	0.0007
Place of work: Eight dummies of the place of work					
Business center	0.150	0.357	0.099	0.299	-0.050***
Office	0.627	0.484	0.558	0.497	-0.069***
at home	0.022	0.148	0.015	0.123	-0.007***
On the street and Gulit	0.012	0.108	0.032	0.176	0.020***
Farm area	0.024	0.152	0.032	0.177	0.009***
Near factory	0.055	0.229	0.051	0.221	-0.004
Any permitted place	0.021	0.143	0.075	0.263	0.054***
Near construction site	0.032	0.175	0.072	0.259	0.041***
Consumer location	0.053	0.224	0.055	0.228	0.002
Number of employees	21,742		8003	13739	

Notes: this table exhibits summary statistics of variables used for the main estimation. Columns (1) and (2) report the statistics for the female subsample, and columns (3) and (4)for the male subsample. Column (5) shows the t-test difference in means between columns (3) and (1). The statistical significance of the differences is indicated by asterisks *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 2: Wage regressions with Heckman two-stage selection model

	(1)	(2)	(3)	(4)	(5)
			Women	Men	OLS
Female	-0.155***	-0.137***			-0.161***
	(0.012)	(0.012)			(0.009)
Female occupational segregation		-0.245***	-0.290***	-0.226***	-0.246***
		(0.024)	(0.038)	(0.026)	(0.024)
Working hours weekly	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.0002)	(0.0002)	(0.0003)	(0.0003)	(0.0002)
Age	0.029***	0.030***	0.015**	0.030***	0.039***
	(0.004)	(0.004)	(0.007)	(0.005)	(0.003)
Age squared	-0.0004***	-0.0004***	-0.0002*	-0.0004***	-0.0005***
	(5.11e-05)	(5.06e-05)	(0.0001)	(6.19e-05)	(3.45e-05)
Married	0.043***	0.040***	0.060***	0.024*	0.040***
	(0.010)	(0.009)	(0.016)	(0.014)	(0.009
Divorced or widowed	-0.034**	-0.034**	-0.054***	-0.004	-0.028*
	(0.016)	(0.016)	(0.021)	(0.026)	(0.016)
Permanent employee	0.205***	0.204***	0.245***	0.181***	0.206***
	(0.012)	(0.012)	(0.018)	(0.016)	(0.012)
Seasonal employee	0.095***	0.093***	0.039*	0.113***	0.094***
	(0.014)	(0.013)	(0.021)	(0.017)	(0.013)
Work experience	0.022***	0.022***	0.015***	0.024***	0.021***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
Work experience Squared	-0.0003***	-0.0003***	-3.48e-05	-0.0004***	-0.0003***
	(4.62e-05)	(4.58e-05)	(8.12e-05)	(5.62e-05)	(4.57e-05)
Internal Migrant	0.034***	0.034***	0.006	0.048***	0.046***
	(0.009)	(0.009)	(0.013)	(0.011)	(0.008)
Public sector	-0.028***	-0.027***	0.022	-0.053***	-0.027**
	(0.011)	(0.011)	(0.016)	(0.014)	(0.011)
Primary education	0.096***	0.100***	0.056*	0.107***	0.125***
	(0.019)	(0.019)	(0.029)	(0.024)	(0.017)
Secondary education	0.245***	0.249***	0.186***	0.263***	0.281***
	(0.022)	(0.022)	(0.036)	(0.026)	(0.019)
Upper secondary school	0.378***	0.384***	0.280***	0.417***	0.416***
	(0.023)	(0.023)	(0.040)	(0.028)	(0.021)
Vocational collage	0.501***	0.510***	0.400***	0.530***	0.565***
	(0.027)	(0.027)	(0.054)	(0.028)	(0.020)
University degree	0.924***	0.934***	0.800***	0.971***	0.983***
	(0.027)	(0.027)	(0.054)	(0.029)	(0.022)
Nonformal education	-0.132***	-0.127***	-0.075	-0.139***	-0.115***
	(0.039)	(0.039)	(0.072)	(0.047)	(0.039)
Formal employment	0.202***	0.200***	0.315***	0.154***	0.202***
	(0.026)	(0.026)	(0.043)	(0.033)	(0.026)
Lambda/Mills	-0.059***	-0.056***	-0.090***	-0.082***	
	(0.019)	(0.018)	(0.033)	(0.023)	
Constant	5.219***	5.414***	5.395***	5.518***	5.051***
	(0.108)	(0.107)	(0.211)	(0.127)	(0.059)
R-squared	0.552	0.554	0.593	0.507	0.555
Number of employees	21,742	21,742	8,003	13,739	21,742

The dependent variable is the log of the monthly wage. The first two columns used the pooled sample of female and male employees. Columns 3 and 4 are separate regressions for the female and male subsamples. All specifications control for 1-digit industry dummies, 1-digit occupations dummies, dummies for a place of work, and 10 regional dummies. The sample is restricted to working age (between 15 and 64 years old), excluding unpaid family workers, interns and apprentices, and self-employed. The sample is not weighted. Standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3: Unconditional Quantile regression of log monthly earning

	(1)	(2)	(3)	(4)	(5)
Percentile	10th	25th	50th	75th	90th
Panel A					
Female	-0.163***	-0.287***	-0.216***	-0.166***	-0.133***
	(0.018)	(0.015)	(0.012)	(0.013)	(0.015)
Working hours weekly	0.003***	0.002***	0.0005	0.002***	0.002***
	(0.0005)	(0.0004)	(0.0003)	(0.0003)	(0.0004)
Age	0.067***	0.029***	0.034***	0.0404***	0.023***
	(0.006)	(0.005)	(0.004)	(0.00405)	(0.004)
Age squared	-0.0008***	-0.0004***	-0.0005***	-0.0005***	-0.0003***
	(7.37e-05)	(5.98e-05)	(4.96e-05)	(5.24e-05)	(5.88e-05)
Married	0.038*	0.025	0.024*	0.042***	0.055***
	(0.021)	(0.017)	(0.014)	(0.015)	(0.017)
Divorced or widowed	-0.055	-0.099***	-0.059**	-0.002	0.054**
	(0.034)	(0.028)	(0.023)	(0.024)	(0.027)
Permanent employee	0.448***	0.392***	0.182***	0.054***	0.011
	(0.025)	(0.020)	(0.017)	(0.018)	(0.019)
Seasonal employee	0.193***	0.140***	0.056***	0.072***	0.064***
	(0.028)	(0.023)	(0.019)	(0.020)	(0.023)
Work experience	0.0034	0.021***	0.029***	0.0342***	0.015***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)
Work experience Squared	6.21e-05	-0.0003***	-0.0004***	-0.0005***	-0.0002***
	(9.75e-05)	(7.91e-05)	(6.56e-05)	(6.93e-05)	(7.78e-05)
Internal Migrant	0.034**	0.033**	0.046***	0.007	0.0540***
	(0.017)	(0.014)	(0.011)	(0.012)	(0.014)
Public sector	0.135***	0.039**	0.022	-0.120***	-0.128***
	(0.023)	(0.018)	(0.015)	(0.016)	(0.018)
Primary education	0.461***	0.167***	0.004	-0.0008	-0.021
	(0.037)	(0.029)	(0.025)	(0.026)	(0.029)
Junior education	0.738***	0.408***	0.078***	0.094***	0.059*
	(0.040)	(0.033)	(0.027)	(0.029)	(0.032)
Secondary school	0.844***	0.602***	0.310***	0.209***	0.114***
	(0.0436)	(0.035)	(0.029)	(0.031)	(0.035)
Vocational collage	0.929***	0.799***	0.555***	0.319***	0.139***
	(0.042)	(0.034)	(0.028)	(0.030)	(0.034)
University degree	0.853***	0.792***	0.943***	1.147***	1.033***
	(0.046)	(0.037)	(0.031)	(0.033)	(0.037)
Nonformal education	0.115	-0.122*	-0.169***	-0.182***	-0.096
	(0.083)	(0.067)	(0.056)	(0.059)	(0.067)
Formal employment	0.468***	0.217***	0.014	-0.005	0.016
	(0.055)	(0.045)	(0.037)	(0.039)	(0.044)
Constant	2.356***	4.121***	5.529***	6.144***	7.135***
	(0.122)	(0.099)	(0.082)	(0.087)	(0.097)
Observations	21,742	21,742	21,742	21,742	21,742
R-squared	0.242	0.399	0.439	0.376	0.233

Notes: This table reports the estimates of wage regression using the quantile regression method for women and men separately. The dependent variable is the log of the monthly wage. All specifications control for regional, industry, and 1-digit occupation dummies and dummies for place of work. The sample is restricted to working age (between 15 and 64 years old), excluding unpaid family workers, interns and apprentices, and self-employed. The sample is not weighted. Standard errors are reported in parentheses. Control variables are suppressed to save space. The full table is available upon request from the author. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

	(1)	(2)	(3)	(4)	(5)
Percentile	10th	25th	50th	75th	90th
Panel B					
Female	-0.129***	-0.237***	-0.191***	-0.158***	-0.134***
	(0.019)	(0.015)	(0.013)	(0.014)	(0.015)
Female occupational segregation	-0.408***	-0.606***	-0.310***	-0.103***	0.022
	(0.051)	(0.041)	(0.034)	(0.036)	(0.041)
Working hours weekly	0.003***	0.002***	0.0004	0.002***	0.001***
	(0.0004)	(0.0004)	(0.0003)	(0.0003)	(0.0004)
Age	0.067***	0.029***	0.034***	0.040***	0.023***
	(0.006)	(0.005)	(0.004)	(0.004)	(0.004)
Age squared	-0.0008***	-0.0004***	-0.0005***	-0.0005***	-0.0003***
	(7.36e-05)	(5.95e-05)	(4.95e-05)	(5.24e-05)	(5.88e-05)
Married	0.033	0.018	0.020	0.041***	0.056***
	(0.021)	(0.017)	(0.014)	(0.015)	(0.017)
Divorced or widowed	-0.055	-0.099***	-0.059***	-0.002	0.054**
	(0.034)	(0.028)	(0.023)	(0.024)	(0.027)
Permanent employee	0.446***	0.389***	0.181***	0.053***	0.011
	(0.025)	(0.020)	(0.017)	(0.018)	(0.019)
Seasonal employee	0.189***	0.134***	0.053***	0.071***	0.064***
	(0.028)	(0.023)	(0.019)	(0.020)	(0.023)
Work experience	0.003	0.021***	0.029***	0.034***	0.015***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)
Work experience Squared	5.98e-05	-0.0003***	-0.0004***	-0.0005***	-0.0002***
	(9.74e-05)	(7.87e-05)	(6.55e-05)	(6.93e-05)	(7.78e-05)
Internal Migrant	0.032*	0.031**	0.045***	0.006	0.054***
	(0.017)	(0.014)	(0.011)	(0.012)	(0.014)
Public sector	0.136***	0.042**	0.023	-0.119***	-0.128***
	(0.023)	(0.018)	(0.015)	(0.016)	(0.018)
Primary education	0.468***	0.178***	0.010	0.0009	-0.021
	(0.037)	(0.029)	(0.025)	(0.026)	(0.029)
Junior education	0.744***	0.417***	0.083***	0.096***	0.059*
	(0.040)	(0.033)	(0.027)	(0.029)	(0.032)
Secondary school	0.853***	0.616***	0.317***	0.211***	0.113***
	(0.043)	(0.035)	(0.029)	(0.031)	(0.035)
Vocational collage	0.942***	0.818***	0.564***	0.322***	0.138***
	(0.042)	(0.034)	(0.028)	(0.030)	(0.034)
University degree	0.867***	0.814***	0.954***	1.151***	1.032***
	(0.046)	(0.037)	(0.031)	(0.033)	(0.037)
Nonformal education	0.122	-0.112*	-0.164***	-0.181***	-0.0967
	(0.083)	(0.067)	(0.056)	(0.059)	(0.067)
Formal employment	0.464***	0.210***	0.010	-0.006	0.017
	(0.055)	(0.045)	(0.037)	(0.039)	(0.044)
Constant	2.577***	4.448***	5.696***	6.200***	7.123***
	(0.125)	(0.101)	(0.084)	(0.089)	(0.100)
Observations	21,742	21,742	21,742	21,742	21,742
R-squared	0.244	0.405	0.441	0.376	0.233

Notes: This table reports the estimates of wage regression using the quantile regression method for women and men separately. The dependent variable is the log of the monthly wage. All specifications control for regional, industry, and 1-digit occupation dummies and dummies for place of work. The sample is restricted to working age (between 15 and 64 years old), excluding unpaid family workers, interns and apprentices, and self-employed. The sample is not weighted. Standard errors are reported in parentheses. Control variables are suppressed to save space. The full table is available upon request from the author. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4: Unconditional Quantile regression of log monthly earning for women

	(1)	(2)	(3)	(4)	(5)
Percentile	10th	25th	50th	75th	90th
Female occupational segregation	-0.304***	-0.619***	-0.364***	-0.256***	-0.144*
	(0.069)	(0.062)	(0.058)	(0.059)	(0.085)
Working hours weekly	0.003***	0.002***	0.001***	0.0004	0.002**
	(0.0006)	(0.0005)	(0.0005)	(0.0005)	(0.0007)
Age	0.057***	0.023***	0.010	0.026***	0.027***
	(0.008)	(0.007)	(0.006)	(0.007)	(0.009)
Age squared	-0.0007***	-0.0003***	-0.0001	-0.0003***	-0.0002*
	(0.0001)	(9.54e-05)	(8.98e-05)	(9.20e-05)	(0.0001)
Married	0.009	-0.0003	0.041*	0.042*	0.057*
	(0.025)	(0.022)	(0.021)	(0.022)	(0.031)
Divorced or widowed	-0.014	-0.056*	-0.070**	-0.036	-0.060
	(0.035)	(0.031)	(0.029)	(0.029)	(0.042)
Permanent employee	0.421***	0.398***	0.272***	0.063**	0.006
	(0.029)	(0.027)	(0.025)	(0.026)	(0.037)
Seasonal employee	0.192***	0.094***	-0.008	-0.026	0.002
	(0.036)	(0.032)	(0.031)	(0.031)	(0.044)
Work experience	-0.008*	0.011***	0.024***	0.032***	0.008
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Work experience Squared	0.0003**	-3.14e-06	-0.0003***	-0.0003***	0.0003*
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0002)
Internal Migrant	0.030	-0.005	0.019	0.012	0.016
	(0.020)	(0.018)	(0.017)	(0.018)	(0.025)
Public sector	0.058**	0.0355	0.122***	0.023	-0.122***
	(0.027)	(0.024)	(0.023)	(0.023)	(0.033)
Primary school	0.251***	0.129***	-0.068*	0.001	0.017
	(0.043)	(0.038)	(0.036)	(0.037)	(0.053)
Junior school	0.562***	0.405***	-0.013	0.0215	0.055
	(0.047)	(0.042)	(0.039)	(0.041)	(0.058)
Secondary school	0.561***	0.473***	0.279***	0.102**	0.070
	(0.052)	(0.046)	(0.044)	(0.045)	(0.064)
Vocational collage	0.614***	0.620***	0.554***	0.318***	0.190***
	(0.049)	(0.044)	(0.042)	(0.043)	(0.061)
University degree	0.557***	0.609***	0.776***	1.026***	1.334***
	(0.057)	(0.051)	(0.048)	(0.049)	(0.070)
Non formal education	0.277**	-0.204*	-0.093	-0.149	-0.122
	(0.124)	(0.111)	(0.105)	(0.107)	(0.152)
Formal employment	0.740***	0.298***	-0.002	-0.042	-0.026
	(0.073)	(0.066)	(0.062)	(0.063)	(0.090)
Constant	2.897***	4.632***	5.772***	6.349***	6.722***
	(0.159)	(0.142)	(0.134)	(0.137)	(0.195)
Observations	8,003	8,003	8,003	8,003	8,003
R-squared	0.254	0.398	0.554	0.397	0.271

Notes: This table reports the estimates of wage regression using the unconditional quantile regression method for women and men separately. The dependent variable is the log of the monthly wage. All specifications control for regional, industry, and 1-digit occupation dummies and dummies for place of work. The sample is restricted to working age (between 15 and 64 years old), excluding unpaid family workers, interns and apprentices, and self-employed. The sample is not weighted. Standard errors are reported in parentheses. Control variables are suppressed to save space. The full table is available upon request from the author. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5: Unconditional Quantile regression of log monthly earning for men

	(1)	(2)	(3)	(4)	(5)
Percentile	10th	25th	50th	75th	90th
Female occupational segregation	-0.333***	-0.489***	-0.210***	-0.074	-0.074
	(0.063)	(0.049)	(0.040)	(0.046)	(0.054)
Working hours weekly	0.003***	0.0002	0.0005	0.002***	0.002***
	(0.0005)	(0.0004)	(0.0003)	(0.0004)	(0.0005)
Age	0.057***	0.040***	0.043***	0.035***	0.024***
	(0.007)	(0.005)	(0.004)	(0.005)	(0.006)
Age squared	-0.0007***	-0.0006***	-0.0005***	-0.0004***	-0.0002***
	(8.96e-05)	(7.02e-05)	(5.68e-05)	(6.45e-05)	(7.72e-05)
Married	0.054**	0.007	0.042**	0.045**	0.042*
	(0.027)	(0.021)	(0.017)	(0.019)	(0.023)
Divorced or widowed	0.036	-0.069	-0.031	0.081**	0.087*
	(0.054)	(0.042)	(0.034)	(0.039)	(0.046)
Permanent employee	0.361***	0.336***	0.144***	0.038*	0.018
	(0.032)	(0.025)	(0.020)	(0.023)	(0.027)
Seasonal employee	0.136***	0.143***	0.078***	0.069***	0.087***
	(0.035)	(0.028)	(0.022)	(0.025)	(0.030)
Work experience	0.011***	0.019***	0.028***	0.031***	0.016***
	(0.004)	(0.003)	(0.002)	(0.003)	(0.003)
Work experience Squared	-0.0001	-0.0002***	-0.0004***	-0.0005***	-0.0003***
	(0.0001)	(9.00e-05)	(7.28e-05)	(8.27e-05)	(9.89e-05)
Internal Migrant	0.062***	0.086***	0.023*	0.019	0.061***
	(0.022)	(0.017)	(0.014)	(0.016)	(0.019)
Public sector	0.112***	-0.002	-0.092***	-0.123***	-0.171***
	(0.029)	(0.023)	(0.019)	(0.021)	(0.025)
Primary education	0.415***	0.120***	0.019	0.005	4.65e-05
	(0.048)	(0.038)	(0.030)	(0.035)	(0.041)
Secondary education	0.630***	0.366***	0.126***	0.093**	0.078*
	(0.053)	(0.041)	(0.033)	(0.038)	(0.045)
Upper secondary school	0.802***	0.561***	0.324***	0.211***	0.171***
	(0.056)	(0.044)	(0.036)	(0.040)	(0.048)
Vocational collage	0.852***	0.752***	0.460***	0.289***	0.196***
	(0.055)	(0.043)	(0.035)	(0.039)	(0.047)
University degree	0.842***	0.815***	0.966***	1.116***	1.019***
	(0.059)	(0.046)	(0.037)	(0.042)	(0.051)
Non formal education	-0.130	-0.156**	-0.098	-0.140**	-0.078
	(0.097)	(0.076)	(0.062)	(0.070)	(0.084)
Formal employment	0.335***	0.196***	0.016	-0.028	0.020
	(0.067)	(0.052)	(0.042)	(0.048)	(0.057)
Constant	2.893***	4.543***	5.729***	6.384***	7.106***
	(0.158)	(0.124)	(0.0999)	(0.113)	(0.136)
Observations	13,739	13,739	13,739	13,739	13,739
R-squared	0.212	0.353	0.389	0.335	0.203

Notes: This table reports the estimates of wage regression using the unconditional quantile regression method for women and men separately. The dependent variable is the log of the monthly wage. All specifications control for regional, industry, and 1-digit occupation dummies and dummies for place of work. The sample is restricted to working age (between 15 and 64 years old), excluding unpaid family workers, interns and apprentices, and self-employed. The sample is not weighted. Standard errors are reported in parentheses. Control variables are suppressed to save space. The full table is available upon request from the author. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6: RIF Detailed Decomposition

	(1)	(2)	(3)	(4)	(5)
Percentile	10th	25th	50th	75th	90th
Log wage for men	6.265***	6.770***	7.321***	7.796***	8.187***
	(0.011)	(0.009)	(0.008)	(0.009)	(0.009)
Log wage for women	5.996***	6.319***	6.915***	7.390***	7.849***
	(0.011)	(0.011)	(0.012)	(0.010)	(0.014)
Raw wage difference	0.269***	0.451***	0.406***	0.406***	0.339***
	(0.016)	(0.015)	(0.014)	(0.014)	(0.017)
Total difference due to endowment	0.069***	0.146***	0.131***	0.206***	0.273***
	(0.015)	(0.015)	(0.016)	(0.015)	(0.019)
Total difference due to structural	0.199***	0.306***	0.275***	0.200***	0.066***
	(0.019)	(0.017)	(0.016)	(0.016)	(0.023)
% of endowment effects	25.6	32.3	32.2	50.7	80.5
% of structural effects	73.9	67.8	67.7	49.2	19.4
Endowments Effects					
Female occupational segregation	0.053***	0.117***	0.083***	0.046***	0.036**
	(0.013)	(0.011)	(0.011)	(0.011)	(0.016)
Working hours weekly	0.014***	0.009***	0.008***	0.003	0.008**
	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)
Age	0.190***	0.075***	0.032	0.089***	0.091***
	(0.028)	(0.024)	(0.023)	(0.023)	(0.033)
Age squared	-0.184***	-0.072***	-0.031	-0.074***	-0.057*
	(0.028)	(0.025)	(0.023)	(0.024)	(0.034)
Married	0.001	-0.0002	0.005*	0.005*	0.007*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Divorced or widowed	0.002	0.007*	0.008**	0.004	0.007
	(0.004)	(0.004)	(0.003)	(0.003)	(0.005)
Permanent employee	-0.006**	-0.006**	-0.004**	-0.001*	-0.0001
	(0.003)	(0.003)	(0.002)	(0.0006)	(0.0006)
Seasonal employee	0.005***	0.002**	-0.0005	-0.0008	-9.93e-05
	(0.001)	(0.0009)	(0.0008)	(0.0009)	(0.001)
Work experience	-0.014	0.024***	0.048***	0.062***	0.016
	(0.008)	(0.008)	(0.008)	(0.008)	(0.010)
Work experience Squared	0.015**	-0.0016	-0.019***	-0.017***	0.018**
	(0.007)	(0.006)	(0.006)	(0.006)	(0.009)
Internal Migrant	0.002	-0.0002	0.002	0.001	0.001
	(0.002)	(0.001)	(0.001)	(0.001)	(0.009)
Public sector	-0.001*	-0.0006	-0.003***	-0.0003	0.003**
	(0.0007)	(0.0006)	(0.0009)	(0.0005)	(0.001)
Primary education	0.010***	0.007***	-0.002	0.0006	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Secondary education	0.0007	0.0005	3.87e-06	4.25e-05	8.02e-05
	(0.003)	(0.002)	(5.31e-05)	(0.0002)	(0.0003)
Upper secondary school	-0.0006	-0.0005	-0.0003	-0.0001	-8.04e-05
	(0.002)	(0.002)	(0.001)	(0.0005)	(0.0003)
Vocational college	-0.066***	-0.071***	-0.063***	-0.036***	-0.022***
	(0.007)	(0.006)	(0.006)	(0.005)	(0.007)
University degree	0.043***	0.051***	0.063***	0.082***	0.107***
	(0.00531)	(0.005)	(0.005)	(0.007)	(0.009)
Non formal education	0.002*	-0.001*	-0.0005	-0.0008	-0.0007
	(0.0008)	(0.0007)	(0.0007)	(0.0007)	(0.001)

Table 6. Continued....

	(1)	(2)	(3)	(4)	(5)
Percentile	10th	25th	50th	75th	90th
Formal employment	-0.004***	-0.002**	-0.0001	2.87e-06	1.22e-05
	(0.001)	(0.0007)	(0.0004)	(0.0004)	(0.0005)
Structural Effects					
Female occupational segregation	-0.062**	-0.092***	0.0004	0.015	0.026
	(0.028)	(0.024)	(0.021)	(0.022)	(0.031)
Working hours weekly	-0.008	-0.071**	-0.045	0.059**	0.021
	(0.037)	(0.031)	(0.028)	(0.029)	(0.040)
Age	0.077	0.715**	1.202***	0.360	-0.036
	(0.359)	(0.305)	(0.272)	(0.287)	(0.388)
Age squared	-0.029	-0.418***	-0.573***	-0.153	-0.049
	(0.181)	(0.154)	(0.139)	(0.146)	(0.199)
Married	0.023	0.005	0.002	0.003	-0.007
	(0.022)	(0.018)	(0.016)	(0.017)	(0.023)
Divorced or widowed	0.002	-0.001	0.001	0.005**	0.006**
	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)
Permanent employee	-0.034	-0.019	-0.066***	-0.005	0.008
	(0.0286)	(0.024)	(0.021)	(0.023)	(0.030)
Seasonal employee	-0.007	0.008	0.014***	0.013**	0.012
	(0.007)	(0.006)	(0.005)	(0.005)	(0.007)
Work experience	0.164***	0.063	0.036	0.0009	0.077
	(0.051)	(0.043)	(0.039)	(0.041)	(0.055)
Work experience Squared	-0.071**	-0.037	-0.011	-0.035	-0.110***
	(0.029)	(0.024)	(0.022)	(0.023)	(0.032)
Internal Migrant	0.017	0.050***	-0.001	0.001	0.025
	(0.018)	(0.015)	(0.013)	(0.014)	(0.018)
Public sector	0.019	-0.026	-0.115***	-0.079***	-0.026
	(0.022)	(0.018)	(0.016)	(0.017)	(0.023)
Primary education	0.039***	0.005	0.023**	0.004	-0.001
	(0.015)	(0.012)	(0.011)	(0.011)	(0.015)
Secondary education	0.013	0.003	0.025***	0.015*	0.005
	(0.010)	(0.009)	(0.008)	(0.008)	(0.011)
Upper secondary school	0.029***	0.017**	0.009	0.016**	0.013
	(0.008)	(0.007)	(0.006)	(0.006)	(0.009)
Vocational college	0.059***	0.047***	-0.013	0.002	0.005
	(0.017)	(0.015)	(0.013)	(0.014)	(0.018)
University degree	0.063***	0.057***	0.049***	0.029**	-0.063***
	(0.017)	(0.015)	(0.013)	(0.014)	(0.018)
Nonformal education	-0.005**	0.001	9.04e-05	0.0001	0.0005
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Formal employment	-0.365***	-0.096	0.0002	-0.013	0.027
	(0.097)	(0.082)	(0.074)	(0.078)	(0.105)

Notes: This table presents the results of Oaxaca-Blinder type RIF decomposition (Firpo et al., 2018). Males serve as reference groups. The outcome variable is the log monthly wage. The decomposition additionally controls for all characteristics and regional, industry, and 1-digit occupation fixed effects. The sample is restricted to working age (between 15 and 64 years old), excluding unpaid family workers, interns and apprentices, and self-employed. The sample is not weighted. Standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ The term coefficients effects and endowments effects are used as synonyms to unexplained part and explained part of gender wage gap respectively.

Table 7. Unconditional quantile regression of log monthly wages in the public sector

	(1)	(2)	(3)	(4)	(5)
Percentile	10th	25th	50th	75th	90th
Female	-0.161***	-0.108***	-0.107***	-0.129***	-0.136***
	(0.023)	(0.017)	(0.013)	(0.016)	(0.019)
Female occupational segregation	-0.531***	-0.519***	-0.224***	-0.079	-0.028
	(0.077)	(0.056)	(0.044)	(0.054)	(0.065)
Working hours weekly	0.003***	0.0005	-6.31e-05	0.001***	0.002***
	(0.0006)	(0.0004)	(0.0003)	(0.0004)	(0.0005)
Age	-0.018**	0.010*	0.042***	0.044***	0.024***
	(0.008)	(0.006)	(0.004)	(0.005)	(0.007)
Age squared	0.0002**	-0.0002**	-0.0005***	-0.0005***	-0.0003***
	(9.84e-05)	(7.10e-05)	(5.61e-05)	(6.86e-05)	(8.26e-05)
Married	-0.047*	-0.037*	0.004	0.026	0.021
	(0.027)	(0.019)	(0.015)	(0.018)	(0.022)
Divorced or widowed	-0.098**	-0.152***	-0.040	-0.011	0.047
	(0.043)	(0.031)	(0.025)	(0.030)	(0.036)
Permanent employee	0.449***	0.333***	0.048*	-0.091***	-0.050
	(0.042)	(0.032)	(0.025)	(0.031)	(0.037)
Seasonal employee	-0.037	-0.014	-0.042	-0.026	0.049
	(0.055)	(0.039)	(0.031)	(0.038)	(0.046)
Work experience	0.032***	0.027***	0.029***	0.021***	0.011***
	(0.004)	(0.003)	(0.002)	(0.003)	(0.003)
Work experience Squared	-0.0006***	-0.0005***	-0.0004***	-0.0002***	-0.0001
	(0.0001)	(8.81e-05)	(6.97e-05)	(8.52e-05)	(0.0001)
Internal Migrant	0.021	0.036**	-0.006	0.007	0.048***
	(0.021)	(0.015)	(0.012)	(0.014)	(0.017)
Primary school	0.199***	-0.134***	-0.026	-0.001	0.005
	(0.057)	(0.041)	(0.033)	(0.039)	(0.048)
Junior school	0.549***	0.084*	0.076**	0.089**	0.079
	(0.062)	(0.044)	(0.035)	(0.043)	(0.052)
Secondary school	0.719***	0.466***	0.241***	0.161***	0.081
	(0.0638)	(0.046)	(0.036)	(0.044)	(0.053)
Vocational collage	0.843***	0.749***	0.364***	0.236***	0.109**
	(0.0616)	(0.044)	(0.035)	(0.043)	(0.052)
University degree	0.847***	0.863***	0.795***	0.959***	0.793***
	(0.064)	(0.046)	(0.037)	(0.045)	(0.054)
Nonformal education	0.007	-0.063	-0.0395	-0.104	-0.088
	(0.120)	(0.087)	(0.068)	(0.084)	(0.101)
Constant	4.357***	5.247***	5.807***	6.199***	7.058***
	(0.163)	(0.117)	(0.093)	(0.113)	(0.137)
Observations	11,924	11,924	11,924	11,924	11,924
R-squared	0.341	0.516	0.421	0.353	0.207

Notes: This table shows the estimation of the gender wage gap and the effect of occupational segregation on wages for the public sectors. The dependent variable is the log of the monthly wage. All specifications control for regional, industry, and 1-digit occupation fixed effects. The sample is restricted to working age (between 15 and 64 years old), excluding unpaid family workers, interns and apprentices, and self-employed. The sample is not weighted. Standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 8. Unconditional quantile regression of log monthly wages in the private sector

	(1)	(2)	(3)	(4)	(5)
Percentile	10th	25th	50th	75th	90th
Female	-0.073**	-0.152***	-0.320***	-0.250***	-0.191***
	(0.029)	(0.022)	(0.019)	(0.025)	(0.035)
Female occupational segregation	-0.157**	-0.231***	-0.302***	-0.216***	-0.012
	(0.0708)	(0.0521)	(0.0469)	(0.059)	(0.082)
Working hours weekly	0.004***	0.003***	0.001**	0.001***	0.002***
	(0.0006)	(0.0005)	(0.0004)	(0.0005)	(0.0007)
Age	0.073***	0.064***	0.035***	0.038***	0.032***
	(0.008)	(0.006)	(0.005)	(0.007)	(0.009)
Age squared	-0.0009***	-0.0008***	-0.0005***	-0.0005***	-0.0004***
	(0.0001)	(7.67e-05)	(6.91e-05)	(8.73e-05)	(0.0001)
Married	0.0755**	0.0396*	0.0625***	0.108***	0.145***
	(0.032)	(0.023)	(0.021)	(0.026)	(0.037)
Divorced or widowed	-0.011	-0.069*	-0.040	0.034	0.099*
	(0.051)	(0.037)	(0.034)	(0.043)	(0.059)
Permanent employee	0.149***	0.270***	0.236***	0.192***	0.166***
	(0.031)	(0.023)	(0.020)	(0.026)	(0.035)
Seasonal employee	0.047	0.094***	0.111***	0.153***	0.136***
	(0.033)	(0.025)	(0.022)	(0.028)	(0.039)
Work experience	-0.012**	0.005	0.021***	0.031***	0.029***
	(0.005)	(0.004)	(0.003)	(0.004)	(0.006)
Work experience Squared	0.0003**	-3.26e-06	-0.0003***	-0.0006***	-0.0006***
	(0.0001)	(0.0001)	(9.64e-05)	(0.0001)	(0.0002)
Internal Migrant	0.106***	0.009	-0.002	0.029	0.108***
	(0.026)	(0.019)	(0.017)	(0.022)	(0.030)
Primary education	0.339***	0.277***	0.079**	0.017	-0.010
	(0.047)	(0.034)	(0.031)	(0.039)	(0.054)
Secondary education	0.507***	0.452***	0.219***	0.121***	0.131**
	(0.052)	(0.039)	(0.035)	(0.044)	(0.061)
Upper secondary school	0.460***	0.505***	0.372***	0.289***	0.271***
	(0.058)	(0.043)	(0.039)	(0.049)	(0.067)
Vocational collage	0.579***	0.645***	0.545***	0.454***	0.391***
	(0.058)	(0.043)	(0.038)	(0.049)	(0.067)
University degree	0.461***	0.544***	0.715***	1.335***	1.927***
	(0.071)	(0.053)	(0.047)	(0.059)	(0.086)
Nonformal education	-0.0116	-0.0688	-0.184**	-0.281***	-0.227*
	(0.110)	(0.081)	(0.073)	(0.092)	(0.128)
Formal employment	0.574***	0.229***	0.101***	0.0817*	-0.028
	(0.058)	(0.042)	(0.038)	(0.048)	(0.066)
Average RIF	6.052	6.584	7.116	7.675	8.046
Constant	2.567***	3.914***	5.595***	6.101***	6.838***
	(0.167)	(0.123)	(0.111)	(0.140)	(0.193)
Observations	9,818	9,818	9,818	9,818	9,818
R-squared	0.139	0.265	0.368	0.336	0.258

Notes: The dependent variable is the log of the monthly wage. All specifications control for regional, industry, and 1-digit occupation fixed effects. The sample is restricted to working age (between 15 and 64 years old), excluding unpaid family workers, interns and apprentices, and self-employed. The sample is not weighted. Standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Appendix

Table A1: Definition of Variables

Variables	Definitions
Log of wage:	log of gross income received in (Eth birr)last month.
Age:	The age of employees.
Married:	Dummy equals one if the employee is married and living together
Divorced or widowed:	Dummy equals one if the employee is divorced or widowed.
Working hours:	the number of hours worked per week
Work experience:	employee's years of employment experience.
Formal employee:	Dummy variable equal to one if employees engaged in the formal sector
Female occupational segregation:	Percentage of female employees within occupations
Migrant:	Dummy equals one if an employee is an internal migrant
Primary school:	Dummy equals one if an employee has completed grade one until grade eight education level
Secondary school:	Dummy equals one if the employee completed grade nine until grade ten education
Upper secondary school:	Dummy equals one if the employee completed grade eleven until grade twelve level of education
Vocational college:	Dummy variable equal to one if employees have completed a vocational diploma and certificate
University degree:	Dummy equal to one if employees have completed a degree and above degree level of education
Nonformal education:	Dummy equals one if the employee has completed a nonformal level of education. The dummy equals 0 if the employee has no education
Children in HH:	a dummy equals one if there are children in the household
Permanent employee:	Dummy equal to one if the employee has a permanent employment contract
Seasonal employee:	Dummy equals one if the employee works casually or seasonally. The dummy equals zero if the employee has a temporary employment contract.
Public sector:	A dummy equals one if an employee works in the public sector, such as local government and government development organizations; a dummy equals 0 if the employee is working in the private sector, such as private enterprises, local and international nonprofit organizations, and members of co-operatives).
Occupation dummies:	Eight one-digit occupation dummies.
Industry dummies:	Sixteen one-digit industry dummies.
Place of work dummies:	Eight dummies of the place of employment/work.
State dummies	Ten federal state/administration dummies.

Table A2: Oaxaca Blinder Decomposition

	(1) Overall	(2) Explained	(3) Unexplained
Mean log wage for men	7.217***		
	(0.007)		
Mean log wage for women	6.856***		
	(0.009)		
Raw wage difference	0.360***		
	(0.011)		
Total difference due to explained part	0.240***		
	(0.014)		
	[66.4 %]		
Total difference due to unexplained part	0.121***		
	(0.013)		
	[33.6 %]		
Female occupational segregation		0.084***	-0.036
		(0.005)	(0.024)
Working hours weekly		0.009***	-0.021
		(0.001)	(0.021)
Age		0.101***	0.068
		(0.015)	(0.278)
Age squared		-0.092***	-0.007
		(0.014)	(0.131)
Married		0.004***	-0.003
		(0.001)	(0.011)
Divorced or widowed		0.005***	0.002
		(0.002)	(0.003)
Permanent employee		-0.003**	-0.040**
		(0.001)	(0.017)
Seasonal employee		0.003***	0.008**
		(0.0006)	(0.004)
Work experience		0.043***	0.066***
		(0.004)	(0.025)
Work experience Squared		-0.016***	-0.042***
		(0.003)	(0.013)
Internal Migrant		0.003***	0.025***
		(0.0007)	(0.009)
Public sector		0.0008**	-0.046***
		(0.0004)	(0.013)
Primary education		0.007***	0.007
		(0.001)	(0.008)
Secondary education		0.0004	0.009
		(0.002)	(0.007)
Upper secondary school		-0.0005	0.014***
		(0.002)	(0.005)
Vocational college		-0.066***	0.022
		(0.005)	(0.014)
University degree		0.081***	0.016*
		(0.006)	(0.008)
Non formal education		-0.0007**	-0.0006
		(0.0004)	(0.0008)
Formal employment		-0.001**	-0.162**
		(0.0005)	(0.074)

The dependent variable is the log of the monthly wage. All specifications control for regional, industry, and 1-digit occupation dummies. The sample is restricted to working age (between 15 and 64 years old), excluding unpaid family workers, interns and apprentices, and self-employed. The sample is not weighted. Bootstrap standard errors with 100 replications are in parentheses, and standard errors are reported in parentheses. Control variables are suppressed to save space. The full table is available upon request from the author. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Figure 6: Oaxaca Blinder Decomposition: the contribution of each variable

Notes: The graph is illustrated using Table (A2) regression.

Figure 7: Gender-dominated occupations and average monthly wage in Ethiopian birr

The graph is illustrated using Table (A4) estimation. Source: LFS 2013, Ethiopia

Table A3: Quantile regression of log monthly earning

	(1)	(2)	(3)	(4)	(5)
Percentile	10th	25th	50th	75th	90th
Female	-0.133***	-0.249***	-0.199***	-0.161***	-0.133***
	(0.019)	(0.015)	(0.013)	(0.013)	(0.015)
Female dominated occupations	-0.268***	-0.367***	-0.150***	-0.046**	0.021
	(0.031)	(0.025)	(0.021)	(0.022)	(0.025)
Integrated occupations	-0.220***	-0.185***	-0.092***	-0.038**	-0.005
	(0.025)	(0.020)	(0.017)	(0.018)	(0.020)
Constant	2.546***	4.329***	5.647***	6.194***	7.157***
	(0.125)	(0.101)	(0.084)	(0.089)	(0.099)
R-squared	0.246	0.405	0.441	0.376	0.233
Number of employees	21,742	21,742	21,742	21,742	21,742
Women					
Female dominated occupations	-0.233***	-0.378***	-0.215***	-0.0954***	0.0151
	(0.0414)	(0.0371)	(0.0350)	(0.0358)	(0.0509)
Integrated occupations	-0.216***	-0.225***	-0.135***	-0.0204	0.0850*
	(0.0378)	(0.0339)	(0.0319)	(0.0327)	(0.0464)
Constant	2.895***	4.524***	5.708***	6.265***	6.611***
	(0.158)	(0.142)	(0.134)	(0.137)	(0.194)
R-squared	0.256	0.398	0.554	0.396	0.271
Number of employees	8,003	8,003	8,003	8,003	8,003
Men					
Female dominated occupations	-0.211***	-0.303***	-0.0825***	-0.0411	-0.0294
	(0.0424)	(0.0332)	(0.0269)	(0.0305)	(0.0365)
Integrated occupations	-0.183***	-0.155***	-0.0654***	-0.0525**	-0.0105
	(0.0304)	(0.0238)	(0.0193)	(0.0219)	(0.0262)
	(0.0245)	(0.0176)	(0.0163)	(0.0178)	(0.0252)
Constant	2.896***	4.467***	5.677***	6.390***	7.079***
	(0.156)	(0.122)	(0.0987)	(0.112)	(0.134)
R-squared	0.213	0.354	0.389	0.335	0.203
Number of employees	13,739	13,739	13,739	13,739	13,739

The dependent variable is the log of the monthly wage. The upper panel uses the sample of men and women combined, and the lower panel shows the results for the women and men separately. All specification control for regional, industry, and 1-digit occupation fixed effects, age and age (squared), marital status, education completed, work experience and its squared term, public and formal employment, permanent contract, seasonal contract, and internal migration background. The sample is restricted to working age (between 15 and 64 years old), excluding unpaid family workers, interns and apprentices, and self-employed. The sample is not weighted. Bootstrap standard errors with 100 replications are in parentheses, and standard errors are reported in parentheses. Control variables are suppressed to save space. The full table is available upon request from the author. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$