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Gender Wage Gaps by Knowledge Intensity in Turkish Service Sector[1]

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Türkiye'de Hizmet Sektöründe Bilgi Yoğunluğuna Göre Cinsiyete Dayalı Ücret Farklılıkları	**Gender Wage Gaps by Knowledge Intensity in Turkish Service Sector**
Öz Bu çalışma, Türkiye'de bilgi yoğun hizmetlerin, hizmet sektöründe cinsiyete dayalı ücret farklılıklarını ve kadın işgücü niteliklerini iyileştirip iyileştirmediğini 2019 Türkiye Hanehalkı İşgücü Araştırması verilerini kullanarak belirlemeyi amaçlamaktadır. Ortalama ücret farklılıkları ve ücret dağılımı boyunca ücret farklılıkları sırasıyla Heckman örneklem seçilim modeliyle birlikte Oaxaca-Blinder dekompozisyonu ve Melly dekompozisyonu yöntemleriyle incelenmiştir. Sonuçlar, bilgi yoğun hizmetlerin istihdamında kadınların nispeten daha yüksek ortalama ücret elde etmelerine rağmen, bilgi yoğun hizmetlerde sektör içi cinsiyete dayalı ücret eşitsizliğinin daha yüksek olduğunu ve hizmet sektörüne göre nispeten daha kötü çalışma koşulları sunduğunu göstermektedir.	**Abstract** This study aims to determine whether knowledge intensive services (KIS) reduce gender wage gaps and women's labor attributes in the Turkish service sector by employing survey data from the Turkish Household Labor Force Survey of 2019. Both mean wage differences and wage differences across the wage distribution are examined by employing the Oaxaca–Blinder wage decomposition, along with the Heckman sample selection procedure, and the Melly decomposition approaches respectively. The results suggest that, in spite of the relatively higher mean wages of women in KIS employment, KIS offers worse employment outcomes for women in terms of intra-sector wage inequality, and relatively poorer working conditions than the Turkish service sector.
Anahtar Kelimeler: Blinder–Oaxaca, Melly, Kantil, Cinsiyet, Bilgi Yoğun Hizmet, Ücret Eşitsizliği	**Keywords:** Blinder–Oaxaca, Melly, Quantile, Gender, KIS, Wages Gaps
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Araştırma ve Yayın Etiği Beyanı	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
Yazarların Makaleye Olan Katkıları	Çalışmanın tamamı yazar tarafından hazırlanmıştır.
Çıkar Beyanı	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

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1. Introduction

Despite the fact that, in most countries, women are less likely to join the labor market than men, these gender disparities in labor market participation rates have been narrowing considerably in recent decades. Several supply and demand related forces have been considered in literature to be responsible for driving this change. On the supply side of the labor market, the increasing availability of flexible working hours, the presence of new household technologies reducing the workload of routine household responsibilities, and the declining fertility rates due to improved birth control, and finally the changes in the political and social attitudes towards women, have collectively reinforced the increased involvement of women in the labor force (Mankiw, 2015). On the demand side, in turn, the expanding predominance of the service sector over the production industry, the emergence of the new technologies which ease the substitution of male and female employees by decreasing the workload of manual tasks, the diffusion of anti-discrimination policies favoring women, and the increasing women's participation at the tertiary level of education are considered as the main forces which make firms more willing to hire women (Dolado et al., 2002). However, this positive trend in women's labor activity seems to have failed to be transformed into equal wage treatment between men and women, since women are still being paid less than men for the same work; consequently, gender wage inequality persists in most countries.

Among the factors that change women's position in the labor market, the increasing prominence of the service sector and the use of the new technologies are the two closely related factors, which collectively deserve special attention – both for their potential to reduce gender wage inequality, and also for their usefulness in understanding the nature of the persisting wage disparity between men and women. In this sense, KIS activities need to be examined from the gender inequality perspective, since they have a crucial role in establishing a bridge between service activities and the use of new technologies.

KIS firms are simply defined as organizations in the service sector which intensively make use of and/or rely on professional knowledge or know-how associated with a particular (functional or technical) domain. These firms may function as sources of knowledge, by providing consultancy, reports, and education. They may otherwise act as the providers of information and communication technologies (ICT) used in the production processes of other organizations. In other words, in addition to being practitioners of recent technology, some KIS firms are also carriers or even distributors of new technology (such as R&D, strategic consultancies, management and training services, business intelligence, etc.), whereas others are the key manufacturers of new technologies, namely of ICTs (Windrum and Tomlinson, 1999).

There are several reasons why the rise of the service sector can increase women's participation in the labor market, and by extension, their relative wages. Unlike the intensive physical requirements of the manufacturing sector, the knowledge and communication reliant nature of the service sector puts forward a natural comparative advantage for women, in the use of interpersonal communication skills (Galor and Weil, 1996; Goldin, 2006; Rendall, 2017). Furthermore, to a certain extent, occupations in the service sector require specific skills related to household work, which historically have been mainly performed by women (Ngai and

Petrongolo, 2017; Duenas-Fernandez et al., 2015). As is the case of the employment in the overall service sector, the higher use of technology in some occupations, and the employment opportunities generated by the diffusion of ICTs, can boost women's employment by causing a shift in labor demand, and by increasing the prevalence of attribute requirements which favor women (Goldin, 2006; OECD, 2007; Goldin and Katz 2016; Abd Elkhalek, 2017).

For the case of Turkey, male-domination of social structures appears to be reflected within the labor market in the form of the high unemployment rate and the low labor force participation rate of women, due often to domestic responsibilities (KEIG, 2013). Despite the gradual improvements made thanks to the economic and social developments attained in recent decades, women's involvement in the lobar force have not only been significantly low relative to men's in Turkey, but also low compared to international standards. As of 2019, women's labor force participation was at 34.4%, while the mean OECD rate stood at 53.1%. Similarly, the disadvantageous position of women in the Turkish labor market can be observed in many other labor market indicators. The Global Gender Gap Report of 2017 reported Turkey's rank in gender wage parity as being 131st among 144 countries. In 2019, women unemployment rate was 16.8% in Turkey, whereas the mean OECD rate and the mean European Union (27 countries) rate were 5.8% and 7.1% respectively. According to the 2020 ILO report, the median gender wage gap in Turkey in 2018 was 16.1%, whereas the OECD reported the 2018 mean OECD gender wage gap as standing at 12.8%. As for KIS employment, gender differences are found in Turkey to mirror the differences across the broader labor market. As of 2019, women's labor force participation rate was 34.2% in Turkey, while it was 52% across the 28 European Union countries.

The purpose of this study is to explore the extent to which KIS employment is capable of strengthening women's position in the service sector, and thereby reducing the gender wage gap in the Turkish service sector and the labor market as a whole. In order to compare the three categories of the KIS sub-sector, the less knowledge intensive (LKIS) sub-sector (both within the service sector), and the non-service sector with one another, both mean wage differences and wage differences beyond the mean are examined. For exploring the mean wage differences between men and women, the gender wage gap is decomposed into two aspects - one which can be linked to men and women's different labor and personal traits, and one which is attributable to different wage treatment for men and women without justification (discrimination). For identifying these two aspects of gender wage inequality, the Oaxaca-Blinder decomposition with a Heckman correction for selection bias is employed. To meet the goal of moving the gender wage gap analysis beyond the mean, gender wage differences are explored throughout the wage distribution. Furthermore, Melly (2006) decomposition is employed with the aim to see whether there are unequal conditions between women at different wage levels - this may take the form of wage gaps appearing at the higher end (glass ceiling), or at the bottom (sticky floor) of the wage distribution.

The rest of the study is structured as follows. Section 2 provides an overview of the existent literature related to gender wage gap in KIS activities. Section 3 explains the methodology, and the data and variables construction employed in this study. Section 4 explains results obtained, while section 5 offers a discussion and conclusion of the findings.

2. Literature Review

The existing literature on the impact of KIS and ICTs on mean gender wage gap seems to be divided into two parts. The first branch upholds the view that the expansion of KIS and ICTs enhances women's labor conditions, while the second emphasizes the concentration of women in KIS and ICT jobs which require fewer qualifications, thus resulting in wage gaps. Here, a brief overview of the related literature will be presented.

As briefly mentioned in the introduction, studies indicated the positive effect of the knowledge intense and ICT occupations on women's wage and opportunities in labor markets; these effects mainly relate to improving the labor situation and increasing labor participation opportunities of women. As shown by Oleksy et al. (2012) in their cross-country study, ICTs have a favorable impact on gender balance in the labor market across the EU region, as well as worldwide. Barza et al. (2020) examined the issue from the perspective of skilled-unskilled labor in Brazilian KIS and showed that gender wage differences of skilled workers are lower in the KIS sub-sector, whereas this tendency cannot be observed for unskilled workers. Ural et al. (2009) showed that differential treatment in the labor market against women in Korea is less frequent in KIS industries than in low KIS ones. Examining Arab countries, Abd Elkhalek (2017) revealed that the knowledge economy has a favorable impact on the participation of women in the labor market, even in spite of the discouraging cultural and social norms against women's employment in the examined countries. Ng and Mitter (2005) presented the experiences of women in a diverse range of developing countries, including Malaysia, Morocco, the Philippines, Argentina, and India, and showed the significant effects of ICTs in the labor participation rate of women.

The second branch of the related literature strongly emphasizes the embedded unfavorable working conditions and disadvantageous social and cultural norms affecting women in the labor market, each of which are replicated in the spheres of KIS- and ICTs-related employment. These norms thereby prevent these sectors from fulfilling their potential of reducing gender wage gaps. Brussevich et al. (2019) examined the task composition of men and women in the workplace for 30 developed and developing economies and showed that women have a significantly higher risk of losing their jobs due to the technological transformation of labor markets than men do. Simonsen and Corneliussen (2020) examined the ICT sector from a gender-related perspective and presented the case that women are significantly under-represented in both ICT education and ICT work across Europe, when compared to the general female employment rate. Belgorodskiy et al. (2012) showed that culture of secret-salaries increases the gender wage gap and discriminatory treatment in ICT occupations in both the United Kingdom and in New Zealand. Richardson (2007) examined the labor market in the United Kingdom and found that women are exposed to discrimination not only in terms of cultural norms, but also in terms of salary treatment when it comes to ICT occupations, due to factors such as a culture of secret-salaries, as well as the prevalence of part-time work, and occurrences of maternity leave. Truss et al. (2012) explored the KIS sub-sector in the UK and Ireland and showed that women tend to occupy lower-status positions, as well as lower job security, despite their equal job qualifications and experiences. Bryne and Staehr (2011) presented that there is significant indirect wage discrimination in the Australian ICT industry.

Similarly, Dueñas-Fernández et al. (2015) examined the Spanish KIS sub-sector, and showed that KIS improves women's wages, but cannot reduce the broader gender wage differences in the labor market, due to the embedded gendered structures. Another study on the Spanish labor market by Segovia-Perez et al. (2020) showed the unfavorable working conditions of female ICT employees, particularly those in top qualified jobs and in ICT-intensive services. Bustelo et al. (2019) examined Latin American countries and showed the sizeable gender differences present the areas of science, technology, engineering, and mathematics (STEM), affecting both wage returns, and negatively impacting skill accumulation. Among these studies which examine the impacts of KIS and ICTs on the mean gender wage gap, only a few (see Ural et al., 2009; Dueñas-Fernández et al., 2015; Bustelo et al., 219; Barza et al., 2020; Segovia-Perez et al., 2019) employed the Oaxaca-Blinder decomposition methodology to reveal the explained and unexplained fractions of gender wage inequality.

Despite the numerous studies studying the gender wage differentials in the Turkish labor market, a limited amount of literature exists on the gender gap in Turkey's ICTs or KIS sub-sectors. Gorkey (2019) presented evidence of a significant gender wage gap in labor market participation in Turkey's ICTs between the years 2008 and 2016. Dube et al. (2015) explored the fast extension of the ICT sector in Turkey between 2000 and 2013 and showed that female unemployment and the growth of ICTs is positively correlated. On the other hand, Atik and Altıparmak (2011) as well as Arslan et al. (2011) showed a positive association between female employment and the development of the information sector in Turkey.

The literature on the gender wage inequality beyond the mean in KIS and ICTs is quite limited. To the best of our knowledge, the only two attempt to analyze the gender wage inequality along the wage distribution by employing quantile decomposition technique are Dueñas-Fernández et al (2013) for ICTs and Dueñas-Fernández et al (2015) for KIS in Spanish economy which found glass ceiling effect in ICTs and KIS respectively. For Turkish economy, there has been some studies examining gender wage differences along the wage distribution for the whole labor market. Cudeville and Gurbuzer (2007) indicated a limited glass ceiling effect in regard of presumably high selectivity for women with tertiary education. Kaya (2017) found glass ceiling effect in the Turkish economy stemming from the differences in rewards between genders for their labor market characteristics, but no glass ceiling is observed in the raw gender wage gap. Aktas and Uysal (2016) did not report gender wage differences at the lower part of the wage distribution in their firm level analysis while Tokatlioglu and Dogan (2021) found high gender wage differences at the lower part of the wage distribution for nation-wide.

To the best of our knowledge, there has been no attempt to investigate gender wage inequality between men and women at the mean or along the wage distribution in the Turkish service sector with respect to knowledge intensity levels. Thus, this study aims to fulfill this gap by examining both the mean wage differences and the quantile differences between women and men for the Turkish KIS and LKIS sub-sectors.

3. Methodology, Data and Variable Construction

With the aim of decomposing the mean differences of log monthly net wages between man and women with respect to some personal and employment characteristics, Oaxaca- Blinder decomposition (Blinder 1973; Oaxaca 1973) which is a widely used methodology in the examination of labor market outcomes is employed. This methodology decomposes the wage differentials into two parts, one can be explained by personal and workplace characteristics, and one cannot be explained by them, named as explained and unexplained parts respectively. Following Jann (2008), men and women are labelled as Group M and Group F,

$$R = E(lnY_M) - E(lnY_F) \quad (1)$$

where E(Y) is the expected value of log monthly net wages is accounted for the gender differences in the predictors.

Based on the linear model

$$Y_\ell = X'_\ell \beta_\ell + \epsilon_\ell, \quad E(\epsilon_\ell) = 0, \quad \ell \epsilon \{M, F\} \quad (2)$$

where X is a vector that contains a constant and the predictors, β includes the intercept and slope parameters and ϵ is the error term. Here, the mean monthly wage disparity can be expressed as the difference in the linear prediction at the gender-based means of the predictors. That is

$$R = E(Y_M) - E(Y_F) = E(X_M)'\beta_M - E(X_F)'\beta_F \quad (3)$$

Since

$E(Y_\ell) = E(X_\ell \beta_\ell) + E(\epsilon_\ell) = E(X_\ell)'\beta_\ell$ with $E(\beta_\ell) = \beta_\ell$ and $E(\epsilon_\ell) = 0$ by assumption.

A way to establish the contribution of gender differences in predictors to the log monthly net wage difference is twofold decomposition where a vector of nondiscriminatory coefficients is employed to identify the contribution of the differences in the explanatory variables. Defining β^* be as a nondiscriminatory coefficients vectors, equation (3) can be rearranged as:

$$R = [E(X_M) - E(X_F)]'\beta^* + [E(X_M)'(\beta_M - \beta^*)B + E(X_F)'(\beta^* - B_F)] \quad (4)$$
$$R = E + U$$

where the first component $E = [E(X_M) - E(X_F)]'\beta^*$ is the part of the decomposition which is explained by the gender differences in the predictors and the second component $U = [E(X_M)'(\beta_M - \beta^*)B + E(X_F)'(\beta^* - B_F)]$ is the unexplained part of the decomposition which is attributable to discrimination in the labor market, though it is important to take into account that this part also represents all potential effects of differences in unobserved variables.

For determining the components of this decomposition in the equation (4), estimation for vector β^* is made by assuming that women are the only group exposed to wage discrimination and men are not subjected to (positive) discrimination. Then, $\hat{\beta}_M$ is used as an estimate for β^* to compute the equation (4) as

$$\hat{R} = (\bar{X}_M - \bar{X}_F)'\hat{\beta}_M + \overline{X'}_F (\hat{\beta}_M - \hat{\beta}_F) \quad (5)$$

In order to estimate this decomposition, sample selection bias is attempted to corrected with Heckman's (1976, 1979) two step estimator procedure by adopting the Neuman and

Oaxaca (2004) methodology that deducts the selection effect from wage differential and applies the decomposition. Heckman's two step estimator procedure consists of a probit type of selection model namely a labor market participation equation where a person's decision to being active or not in the labor market depends on a set of variables regarding the personal characteristics of individuals which are assumed to influence the employment probability but do not have a direct influence on wages. This system can be expressed as a two-equation set which includes the below selection to labor force equation (6) as the first step and equation (2), the wage determination equation as the second one:

$$L_\ell^* = H_\ell' \gamma_\ell + \varepsilon_\ell \tag{6}$$

In the above equation L_ℓ^* is a latent variable stands for being active in the labor force, H_ℓ' is a vector of employment determinants, γ_ℓ is the parameter vector and ε_ℓ is the i.i.d error term with a bivariate normal distribution. Following Neuman and Oaxaca (2004), the probability of being active in the labor force can be expressed as

$$Prob\ (L_\ell^* > 0 = Prob(\varepsilon_\ell > -H_\ell' \gamma_\ell) \tag{7}$$
$$= \Phi(H_\ell' \gamma_\ell)$$

where $\Phi(.)$ is the standard normal cumulative distribution function with the variance of ε_ℓ is normalized to 1. In the equation (2) wages are observed for individuals for whom $L_\ell^* > 0$. In order to achieve this two-step procedure, 'Oaxaca' command in Stata is employed with Heckman two step estimator where the sample selection is automatically adjusted by the decomposition (see Batool [2014] and Duenas-Fernandez et al. [2005] for details).

As the second part of the analysis, the gender wage gap is explored in detail with respect to the other purpose of the study to investigate the different part of the wage distribution. Behavior of the gender wage disparities is examined across the entire wage distribution whether to see if unequal conditions exist between women in different wage levels which would be either in the form of wage gaps are being greater at the higher part (glass ceiling) or at the bottom (sticky floor) of the wage distribution. With this aim, Melly's (2006) quantile-based decomposition technique which uses Monte Carlo simulations to decompose the differences between quantiles into an unconditional distribution is employed. The first stage of the procedure is regression estimation of a conditional distribution by quantiles:

$$Q_\theta = (W/X) = X_i \beta(\varphi) \tag{8}$$

where $\varphi \epsilon (0,1)$ stands for the number of the quantiles. After the estimation of the vector of coefficients for $\beta(\varphi)$ and the integration of the conditional distribution over the ranges of the covariates for estimating the unconditional estimator (θ) of the dependent variable, following decomposition can be established in analogy to the Oaxaca- Blinder decomposition:

$$q(\theta, X_M, \beta_M) - q(\theta, X_F, \beta_F) = [q(\theta, X_M, \beta_M) - q(\theta, X_M, \beta_F)] + [q(\theta, X_M, \beta_F) - q(\theta, X_F, \beta_F)] \tag{9}$$

where the effects of coefficients (discrimination) is represented by the first bracket which is the unexplained part and the effect of characteristic differentials is represented by the second bracket which is the explained part (see Melly [2006] and Quisbe Cuba [2020] for methodological details). In this study, the same model used in the Oaxaca Blinder methodology in equation (1) are employed in the Melly decomposition.

As for selection bias correction in quantile wage decomposition, it has been a controversial issue in the wage inequality literature. The few existing efforts to apply the sample selection correction in quantile decomposition are mainly based on a semi-parametric version of the Heckman approach proposed by Buckinsky (1998), which itself suffers from a variety of challenges - such as the issue of the instrumental validity and the need for a selection of a fitting method for the first stage of the bias correction procedure (see Salardi [2012] for details). Considering the methodological approach of this study, which necessitates splitting the dataset into smaller subsets for each of the sectors, these potential problematic issues might be exacerbated. Ultimately, this study leaves the selection bias correction within the quantile wage decomposition method to further research, given the above considerations and the constraints of the selected quantile decomposition method.

The data employed in this research is from the 2019 Household Labor Force Survey (HLFS) compiled by the Turkish Statistical Institute (TurkStat). HLFS contains a rich set of variables - including wages, employment status, economic activity, type of employment contract, age, gender, education, managerial positions, and region of residence recorded, using the Level 2 region classification. In the LFPS sector, the original classification of the economic activity is "NACE Rev. 2," which is required for combining aggregates related to the service sector, based on the knowledge intensity of the sector's activities. By using NACE Rev. 2 codes given by Eurostat (2008), the service sector in the data is divided into KIS and LKIS categories; each is further divided into sub-sectors. LFPS as a data source stands out, on account of its extensive data corresponding to labor and household characteristics, as well as to household composition such as marital status and household size. This abundance of data makes it possible to implement the Heckman correction method for selection bias.

The analysis in this study is restricted to adult employees aged 20-60, who are paid more than half of the minimum wage. The dependent variable in the model (eq. 2) is the logarithm of the monthly wages, which is obtained directly from the HLFS. Monthly wages are defined as the income earned from the main job activity of the previous month (including extra income, such as bonus pay, premiums, etc.). Linear and quadratic terms representing expected experience, as well as a dummy representing higher education are employed in the model as the independent variables representing the human capital attributes of employees. Experience is measured as age, minus years of schooling, minus six following the methodology utilized by Mincer (1974). The equation used for wage consists of a number of explanatory variables regarding the relevant job's characteristics. Tenure is represented in the model with a linear and a quadratic term. Dummy variables regarding firms with 0-10 employees, employees with managerial or supervisory positions, administrative duty, temporary employment, part-time employment, non-manual occupation and residing in a region with wages above the mean are the other variables in the model that represent the job characteristics. The dependent variable in the Heckman filter (equation 6) is a latent variable defining labor market participation (1 = earning an income during the reference period, and 0 = otherwise). A linear and quadratic term for age, a dummy representing being married, and a variable for household size are included in the selection model as independent variables. Melly's (2006) decomposition method, shown in equation (8) employs the same variables as are used in the wage equation, shown in equation (2).

4. Estimation Results

The characteristic features of employment in service, non-service, KIS, and LKIS activities are presented in Table 1. Although all of the sectors are clearly dominated by male employees, KIS seems to have the greater percentage of women among the others. In KIS, 41.2% of the employees are women, in comparison to only 19.8% in non-service and 26.9% in LKIS activities. Even though there are no major disparities in age and marital status characteristics between sectors, employees between 20-24 years old and the single ones are less common in KIS. Although there are no major disparities in age between the sectors, married employees are less common in LKIS than in KIS. A characteristic that distinguishes KIS employment from the others is the degree of the education of its employees, which is remarkably greater in the case of KIS. In this sector, 60.9% of the employees have tertiary education, compared to 21.5% LKIS and 17.1% non-service activities. KIS activities introduce a significant difference in tenure characteristics of its employees as well. Employees with less than 1 year and 1-to-5-year tenure are significantly less in KIS than the other categories. On the other hand, employees with 6 years and more tenure have a greater presence in KIS category with the difference being more noticeable in 20 years and more tenure group. There are no significant differences between the sectors in some of the work characteristics, namely, type of labor contract, type of employment and presence of managerial responsibility in the workplace. Employees with indefinite labor contract, full time job and position without managerial responsibilities consist of more than 90% of the total employees in all of the sector categories. Although the share of employees with full time jobs and without managerial responsibilities are slightly lower in KIS category, employees with indefinite labor contract is slightly higher in KIS than the others. Managers and professionals are particularly more common in KIS employment with 42.2% share while the corresponding shares in LKIS and non-services 8.4% and 6.7 % respectively. Finally, higher rates of non-manual occupation can be seen in the service sector with 86.5 % in KIS and 66.1% in LKIS, while the non-service sector is mainly dominated with the jobs requiring manual qualifications with an only 26.9 % share of the non-manual occupations. In summary, KIS activities are characterized with noticeably higher educational level and non-manual skills. Relative to LKIS and non-service activities, KIS employ more women and provides better working conditions such as more managerial responsibility, more indefinite contracts and full-time jobs.

The characteristic features of employment in service, non-service, KIS, and LKIS activities are presented in Table 1. Although all of the sectors are clearly dominated by male employees, KIS seems to have the greater percentage of women when compared to the others. In KIS, 41.2% of the employees are women, in comparison to only 19.8% in the non-service sector, and 26.9% in LKIS activities. Despite the fact there are no major disparities in age and marital status characteristics between sectors, employees between 20-24 years old, as well as unmarried employees are less common in KIS. Although there are no major disparities in age between the sectors, married employees are less common in LKIS than in KIS. One characteristic that distinguishes KIS employment from the others is the considerably higher degree of education of its employees. In this sector, 60.9% of employees have tertiary education, compared to 21.5% for LKIS, and 17.1% for non-service activities. The KIS sector introduces significant

differences in tenure characteristics of its employees as well. Employees with less than 1 year, and 1-to-5-year tenures are significantly less common in KIS than in other sectors. On the other hand, employees with 6 years tenure or more have a greater presence in the KIS sector, with the difference being yet more extreme for the 20 years tenure or more employee group.

Still, there are no significant differences between the sectors in certain work characteristics. For instance, these characteristics include types of labor contracts, types of employment, and presence of managerial responsibility in the workplace. Employees with indefinite labor contracts, full time jobs, and position without managerial responsibilities consist of more than 90% of the total employees in all of the sector categories.

Table 1: Descriptive Statistics of the Employment Characteristics for the Sector Groups

Characteristics	KIS	LKIS	Non-service	Service
Gender				
Men	58.44	73.81	80.19	64.6
Women	41.56	26.19	19.81	35.4
Age				
20-24	5.85	13.58	10.35	8.95
25-34	31.72	30.47	30.32	31.22
35-44	34.18	31	35.43	32.91
45-54	22.4	20.09	20.31	21.47
55 and above	5.85	4.86	3.59	5.45
Marital Status				
Single	24.51	31.55	25.58	27.33
Married	75.49	68.45	74.42	72.67
Education				
Primary	13.37	27.39	34.87	18.99
Secondary	7.08	20.74	22.1	12.56
High School	9.7	15.15	9.6	11.89
Vocational High S.	8.91	15.25	16.37	11.45
Tertiary	60.93	21.47	17.06	45.11
Tenure				
<1	7.26	17.87	19.75	11.52
1-5	39.3	51.9	47.31	44.36
6-10	19.12	15.6	16.24	17.71
10-15	10.31	6.69	8.26	8.86
16-20	7.76	3.67	4.22	6.12
>20	16.25	4.27	4.21	11.44
Labor Contract				
Indefinite	95.6	95.33	90.7	95.5
Fixed Term	4.4	4.67	9.3	4.5
Type of Employment				
Full Time	96.48	98.58	99.33	97.32
Part Time	3.52	1.42	0.67	2.68
Presence of Managerial Responsibility				
With Managerial Responsibility	8.58	6.28	5.55	7.66
Without Managerial Responsibility	91.42	93.72	94.45	92.34
Type of Occupation				
Managers and professionals	42.25	8.41	6.71	28.68
Others	57.75	91.59	93.29	71.32
Non-manual Occupation				
With Non-manual Occupation	86.47	66.07	26.89	78.29
With Manual Occupation	13.53	33.93	73.11	21.71

Source: Calculated by the author by using 2019 HLSF data.

Although the share of employees with full time jobs and without managerial responsibilities are slightly lower in the KIS category, employees with indefinite labor contracts are slightly higher represented in KIS than the other categories. Managers and professionals are particularly more common in KIS employment, making up 42.2% of employees, with LKIS and non-services making up 8.4% and 6.7% respectively. Finally, higher rates of non-manual occupations can be seen in the service sector, with 86.5 % in KIS, and 66.1% in LKIS - whereas the non-service sector is mainly dominated with jobs requiring manual qualifications, with only a 26.9% share of non-manual occupations. In summary, KIS activities are characterized by noticeably higher educational levels and by non-manual skills. Relative to LKIS and non-service activities, KIS employ more women, and provide better working conditions - such as more managerial responsibility for workers, with more indefinite contracts and full-time jobs.

Table 2 examines the gender-based disparities in the above-mentioned characteristics of KIS, LKIS, non-service, and service sector categories. The table presents the frequency of women employed in each category by setting the frequency of men to 100. For all sector categories, women outnumber men in the younger age categories - this trend is more pronounced in the service sector relative to the non-service sector. Within the service sector, this trend holds stronger – with more women employed than men in younger age categories – with KIS activities than LKIS activities. Women holding university degrees are more prevalent than men in all sector categories, with this trend being most clear in the non-service sector. In terms of tenure characteristics, or of types of labor contracts and types of employment, women in KIS exhibit the opposite trend throughout the sector. Women seem to surpass men in frequency within the “less than 1 year up to 10 years tenure” group in KIS, in the “less than 1 year up to 5 years tenure” group in LKIS, and in the 1-5 years tenure group in the non-service activities; the longer tenure groups are dominated by men in all sector categories. Furthermore, women in the service sector have more fixed term labor contracts than men, with this tendency is more pronounced in KIS activities. On the other hand, women are more concentrated in jobs which provide indefinite term contracts. Part-time employment is notably more common among women than men in all sector categories, with KIS activities holding the highest concentration of women in part-time jobs. Presence of managerial responsibility is less common for women than for men in all groups, and this behavior is more apparent in KIS. Women who are managers and professionals are more common than men in KIS and non-service activities while, though this is less common in the LKIS category. Jobs requiring non-manual qualifications are biased towards women in all sectors, particularly in non-service activities.

These preliminary descriptive statistics show that, despite the fact that women contribute more to KIS labor performance - due to personal attributes such as being younger and holding higher educational qualifications than men, KIS activities have negative impacts on women employees in terms of employment quality. This translates into fewer full-time jobs among women in the sector, less managerial responsibility and tenure, and higher labor instability in terms of having more fixed term labor contracts. On the other hand, women engaging in KIS activities seem to be more often positioned in non-manual occupations and manager positions. These initial findings reveal that, a priori, the non-service sector seems to be more prominent in terms of improving women’s employment quality. KIS activities result in gender distribution patterns that are analogous with those observed along the whole workforce, despite their perceived potential to improve women’s disadvantaged status.

When wages are examined by different sector categories in Table 3, it is seen that mean wages in the overall service sector are very similar to the mean wages of the whole economy, however mean KIS wages are more than two-thirds higher than the mean wages of LKIS and non-service sectors.

Table 2: Differences between Women and Men in Employment Characteristics by the Sector Groups

Characteristics	KIS	LKIS	Non-service	Service
Age				
16-24	174.66	154.93	118.12	139.19
25-34	113.62	107.32	94.32	111.81
35-44	101.74	97.56	109.66	101.96
45-54	79.31	77.73	93.10	80.65
55 and above	58.42	43.86	49.62	56.52
Marital Status				
Single	152.86	163.85	143.40	149.29
Married	86.71	76.35	86.63	85.05
Education				
Primary	147.23	90.04	119.02	100.79
Secondary	47.95	59.15	65.91	45.82
High School	52.99	130.98	105.15	76.76
Vocational High S.	67.41	91.41	57.13	71.64
Tertiary	114.72	148.79	157.97	137.41
Tenure				
<1	138.88	121.02	89.00	109.33
1-5	112.84	119.86	127.83	110.14
6-10	117.44	76.53	95.91	107.06
10-15	91.85	59.76	58.05	89.14
16-20	70.28	49.65	40.08	74.29
>20	64.22	20.19	38.83	69.73
Labor Contract				
Indefinite	97.15	99.06	105.49	97.90
Fixed Term	184.92	120.32	52.04	153.30
Type of Employment				
Full Time	96.28	98.66	99.24	96.84
Part Time	282.50	224.30	246.15	296.84
Presence of Managerial Responsibility				
With Managerial Responsibility	47.00	95.91	86.32	61.33
Without Managerial Responsibility	106.55	100.28	100.83	103.76
Type of Occupation				
Managers and professionals	130.99	69.07	158.47	148.55
Others	81.46	34.34	96.25	84.27
Non-manual Occupation				
With Non-manual Occupation	111.55	126.58	133.14	120.45
With Manual Occupation	45.51	57.05	88.82	44.70

Source: Calculated by the author by using 2019 HLSF data.

It is also found that there are significant differences between mean KIS wages and mean service sector and total economy wages, which favor KIS. On the other hand, mean wages in non-service activities are slightly higher than wages in LKIS. Examining the mean net wages by gender reveals that women earn significantly higher mean monthly wages when they are employed in KIS, while the lowest mean monthly wages for women are observed to be in LKIS activities. Focusing on the gender wage differences across different sectors, it is found that KIS

have the greatest gender wage differences in both absolute and relative terms. On average, men in KIS earn 18.21% higher wages than women in KIS, while the percentage differences between genders are 11.91% and 11.85 % in LKIS and non-service sectors respectively.

Table 3: Mean Monthly Wage Levels (Net) in TL for the Sector Groups

Mean WN	Total	Men	Women	Gross difference (men-women)	% Over women
KIS	3899.60	4218.93	3450.64	768.29	18.21
LKIS	2501.41	2581.96	2274.44	307.52	11.91
Service	3338.83	3468.84	3101.57	367.28	10.59
Non-services	2685.78	2750.37	2424.37	325.99	11.85
Total	3137.93	3213.44	2966.70	246.74	7.67

Source: Calculated by the author by using 2019 HLSF data.

Table 4 exhibits the results of Oaxaca-Blinder Decomposition for KIS and LKIS. Decomposition analysis is conducted in two steps. The first step of decomposition analysis employs human capital variables as the explanatory variables, which include tertiary education, experience, and its quadratic term to see the effects of employees' personal characteristics on gender wage differences. In the second step, this baseline model is extended by adding labor variables, which are tenure and its quadratic term, part-time work, temporary contract, size of the business (0-10 employee), being a manager and/or professional, non-manual occupation, and administrative duty, along with a control variable regarding residing in a region with wages above the mean. Extending the decomposition analysis with labor and control variables allows us to see the effects of the endogenous factors deriving from women's employment conditions in the labor market on gender wage differences.

The wage decomposition section of table 5 reveals that women are paid less than men both in the KIS and LKIS sectors. On the other hand, wage difference between men and women is found to be significantly greater in KIS than in LKIS. For KIS activities, controlling the decomposition with the labor and region variables results in a 10.35% decrease in the wage gap (from 0.425 to 0.381) in KIS, and a slight 1.45 increase (from 1.138 to 1.400) in LKIS. It is accurate to confirm that endogenous factors reduce the gender wage gap in KIS, while they slightly widen it in LKIS. According to the extended models (shown by columns (2) in Table 5), a significantly greater portion of the gender wage differentials is unable to be attributed to personal and labor characteristics. Thus, on occasion, it can be attributed to discrimination. Therefore, it can be concluded that unexplained elements of the gender wage gap are slightly lower in the case of LKIS employment (85.72%) than they are for KIS employment (86.1%). The second part of the table shows the contributions of the personal, labor, and regional variables to the explained parts of the Oaxaca-Blinder decompositions. Baseline models for KIS and LKIS show that holding tertiary education is a personal attribute that reduces the gender wage inequality. On the other hand, the wage inequality increasing effect of experience reverses as employees become yet more experienced. In the decomposition of the extended model for KIS, experience seems to be statistically insignificant, while its squared term continues to diminish the gender wage gap.

Table 4: Oaxaca-Blinder Decomposition for KIS and LKIS Activities

	KIS						LKIS					
Dependent:	(1)			(2)			(1)			(2)		
LnNetMonthlyWage	**Coef.**	**Sig.**		**Coef.**	**Sig.**		**Coef.**	**Sig.**		**Coef.**	**Sig.**	
Wage decomposition:												
LWN-Male	8.23	0.00	***	8.23	0.00	***	7.78	0.00	***	7.78	0.00	***
LWN-Female	7.80	0.00	***	7.85	0.00	***	7.64	0.00	***	7.64	0.00	***
Difference	0.42	0.00	***	0.38	0.00	***	0.13	0.00	***	0.14	0.00	***
Explained	-0.01	0.00	***	0.05	0.00	***	-0.00	0.05	*	0.02	0.00	***
Not Explained	0.43	0.00	***	0.32	0.00	***	0.14	0.00	***	0.12	0.00	***
Explained component contributions:												
Experience	0.04	0.00	***	-0.00	0.66		0.09	0.00	***	0.05	0.00	***
Experience^2	-0.02	0.00	***	-0.00	0.00	***	-0.06	0.00	***	-0.04	0.00	***
Tertiary education	-0.03	0.00	**	-0.01	0.00	***	-0.03	0.00	***	-0.01	0.00	***
Tenure				0.07	0.00	***				0.01	0.00	***
Tenure^2				-0.04	0.00	***				0.00	0.77	
Part time work				0.00	0.00	***				0.00	0.00	***
Temporary contract				0.00	0.00	***				0.00	0.01	**
Business with 0-10 employee				0.04	0.00	***				-0.00	0.32	
Managers and professionals				-0.02	0.00	***				0.00	0.00	***
Non-manual occupation				-0.00	0.00	***				-0.00	0.00	***
Administrative duty				0.00	0.00	***				0.00	0.33	
Region:wages above the mean				-0.00	0.00	***				-0.00	0.00	***
N sample observations	33.718						23,307					

*** significant to 99%; ** significant to 95%; * significant to 90%.

Source: Calculated by the author by using 2019 HLSF data.

Tenure also has an inequality reducing impact, as employees get longer tenure, as implied by its quadratic term. In KIS, other labor characteristics which have wage gap diminishing impacts are being in a managerial or professional position, holding a non-manual occupation, as well as residing in a region with wages above the mean. Holding a part-time job and a temporary contract, being employed in a small business, and working within administrative duties are the labor characteristics which widen the gender wage inequality in KIS activities. For the case of LKIS, variables relating to personal characteristics in the extended model exhibit the same behavior as the baseline model. Tenure squared, a small size of the business, and presence of administrative duty are statistically insignificant. Non-manual occupation, and residing in a region with wages above the mean are the only variables with a statistically significant wage gap reducing impact, along with the variables of higher education and higher years of experience in LKIS activities.

Table 5 exhibits the Oaxaca–Blinder composition results for non-service and service activities. Similar to the KIS and LKIS cases, a remarkable wage differential is observed among men and women. Nonetheless, the gender wage differential is smaller in non-service activities, relative to KIS and service activities as a whole. In absolute terms, unexplained portion of the gender wage gap is fewer in the non-service sector, when compared to KIS and the overall service sector. Decomposition of the baseline model of the non-service sector shows that personal characteristics exhibit the same impacts across KIS, LKIS, and the overall service sector. In the extended model of the non-service sector, higher education, higher years of experience, tenure, being employed in a small business, being a manager and/or professional, and having a non-manual occupation are the personal and labor characteristics that diminish the gender wage gap, along with residing in a region with wages above the mean. The overall

service sector exhibits the same characteristics for KIS, in terms of the contributions of explained components to gender wage differentials, which might indicate towards the weight-of-impact of KIS towards the gender wage gap in overall service activities.

Table 5: Oaxaca-Blinder Decomposition for Non-Service and Service Activities

	Non-Service						Service					
Dependent:	**(1)**			**(2)**			**(1)**			**(2)**		
LnNetMonthlyWage	**Coef.**	**Sig.**		**Coef.**	**Sig.**		**Coef.**	**Sig.**		**Coef.**	**Sig.**	
Wage decomposition:												
LWN-Male	7.84	0.00	***	7.84	0.00	***	8.02	0.00	***	8.02	0.000	***
LWN-Female	7.61	0.00	***	7.65	0.00	***	7.75	0.00	***	7.78	0.000	***
Difference	0.22	0.00	***	0.19	0.00	***	0.27	0.00	***	0.24	0.000	***
Explained	-0.03	0.00	***	-0.02	0.00	***	-0.04	0.00	***	-0.01	0.000	***
Not Explained	0.25	0.00	***	0.21	0.00	***	0.31	0.00	***	0.26	0.000	***
Explained component contributions:												
Experience	0.02	0.00	***	0.01	0.00	***	0.08	0.00	***	0.02	0.000	***
Experience^2	-0.01	0.00	***	-0.00	0.00	***	-0.05	0.00	***	-0.02	0.000	***
Tertiary education	-0.04	0.00	***	-0.01	0.00	***	-0.07	0.00	***	-0.03	0.000	***
Tenure				0.02	0.00	***				0.03	0.000	***
Tenure^2				0.00	0.93					-0.01	0.000	***
Part time work				0.00	0.00	***				0.00	0.000	***
Temporary contract				0.00	0.00	***				0.00	0.000	***
Size of the business (0-10 employee)				-0.01	0.00	***				0.00	0.000	***
Managers and professionals				-0.01	0.00	***				-0.02	0.000	***
Non-manual occupation				-0.00	0.00	***				-0.00	0.000	***
Administrative duty				0.00	0.04	**				0.00	0.000	***
Region:wages above the mean				-0.00	0.00	***				-0.00	0.000	***
N sample observations	25,834						57,025					

*** significant to 99%; ** significant to 95%; * significant to 90%.

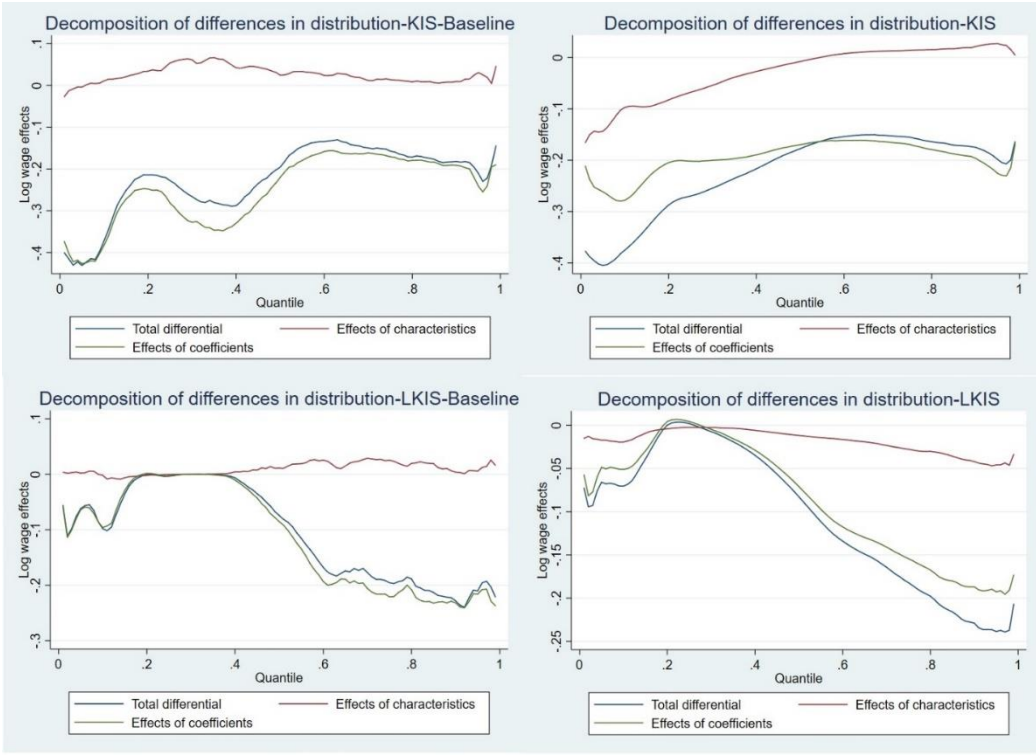
Source: Calculated by the author by using 2019 HLSF data.

The Oaxaca-Blinder decomposition analysis reveals the significant gender wage differences with respect to knowledge intensity in the Turkish service sector. Although KIS activities are characterized with higher wages for women, a more significant gender wage gap, and more unexplained components, when compared to LKIS. This makes KIS an imperfect environment for female employees in the service sector. Furthermore, the non-service sector also has a better overall performance in terms of gender equality than the sector.

Although the examination of the mean gender wage gap provides some important insights on the topic, the aim of exploring the gender wage gap in more detail ultimately lead the study beyond examining the mean, and towards examining the gender wage gap along the overall wage equation. Figure 1 and figure 2 present the results of a Melly (2006) decomposition analysis for the KIS-LKIS sub-sector groups and the non-service sector group respectively. As with the Blinder-Oaxaca decomposition, the two-step approach is followed with the decomposition of the baseline and extended models. In the graphs, the total differential line shows the total gender wage gap; meanwhile the effects of characteristics line shows the wage gap stemming from the characteristic of experience differentials between men and women. Lastly, the effects of coefficients line shows the effect of variable coefficients between men and women and can be interpreted to represent discrimination. The differences between the baseline models and extended models highlight the effect of labor characteristics on the gender

wage gap across sectors. For the case of KIS, the decreasing trend in the total differential and impact of coefficients between the 20th and 40th quantiles in the baseline model is replaced with an upward trend in the extended model, which implies that controlling the decomposition with labor characteristics increases the discrimination and wage gap factors between the 20th and 40th quantiles. With the transition from baseline model to extended model, the stable trend of the effect of characteristics line is replaced with an upward trend. In the extended model, the total differential and effects of coefficients lines also have their minor tendency to fluctuate removed, and rather take the form of a smooth upward trend. The differences between the baseline and extended model decompositions imply that labor characteristics attributed to women in KIS employment increase the total wage inequality through the distribution. Ignoring minor differences at the beginning and end of the wage distribution, total wage differential, characteristic differentials, and discrimination increases alongside the wage gap, when controlled with both personal and labor characteristics, which indicates an apparent glass ceiling in wages for KIS activities. Furthermore, the similarity between both the effects of coefficients and total differential lines indicates the significant magnitude of the discrimination hidden behind unobservable characteristics.

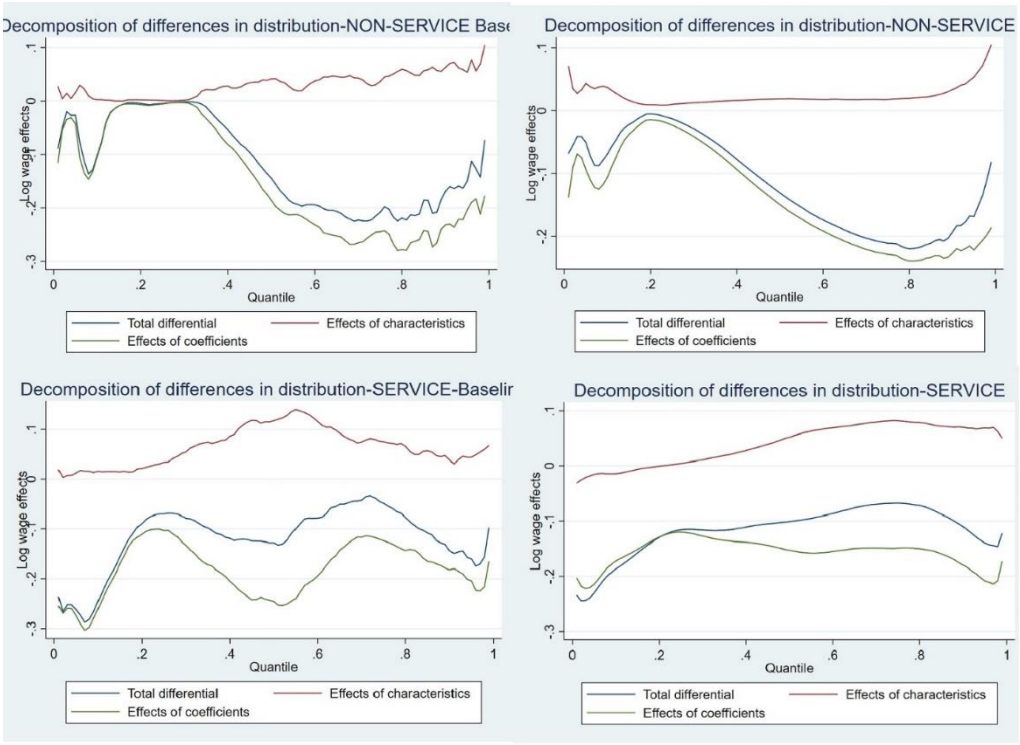
Figure 1: Wage Decomposition by Quantiles - KIS and LKIS



Source: Calculated by the author by using 2019 HLSF data

LKIS, on the other hand, exhibits the opposite behavior to KIS, in terms of its wage decomposition by quantiles. In the decomposition of the extended model, both the total differential and effects of coefficients lines take the form of a reversed U-shaped pattern centered at low-middle quantile, which means gender wage differences and discrimination are more notable at the low-middle quantile, but not at the center and upper parts of the distribution. At these parts, the effects of characteristics, total differential, and effects of coefficient lines decrease along with wage discrimination, with a slight decrease in correlation in the former, which indicates a sticky floor in the distribution. Therefore, a glass ceiling effect is observed only at the very low end of the distribution, whereas a clear sticky floor is observed at the rest of the wage distribution, excluding the top 1% wage group. Extending the baseline model with labor characteristic variables removes the minor fluctuations in the lines and creates the reversed U-shaped pattern in the total differential and effects of coefficient lines, while also steadying the effects of characteristics line, and giving it a slight downward trend. Thus, labor attributes offered to women in LKIS decrease the gender wage gap.

Figure 2: Wage Decomposition by Quantiles – NON-SERVICE and SERVICE



Source: Calculated by the author by using 2019 HLSF data.

As it can be seen in Figure 2, behaviors of both the effects of coefficients and total differential lines follow individual trends at different parts of the wage distribution of non-service activities. Ignoring the fluctuations between the first and 10th quantiles, inversed U-shaped and U-shaped patterns are observed at both the low and high part of the distribution,

respectively. At low and high wage levels, a glass ceiling effect is observed, while the center of the distribution exhibits an apparent sticky floor. The effect of characteristics line seems to follow a smooth trend between the 20th and 80th quantiles, while both sticky floor and glass ceiling effects are observed at the low-end and at the top-end of the wage distribution respectively. Introducing the labor characteristic variables to the baseline model removes the minor fluctuations of the model but does not cause major changes in the wage decomposition across the quantiles of non-service activities. Figure 2 also reveals that the broader service sector closely reproduces the situation observed within KIS employment. As such, the characteristics of KIS sub-sector dominates the situation in the whole sector, in terms of gender wage differentials.

Examining the wage distribution via a Melly decomposition shows that the gender wage gap, discrimination, and effects of personal attributes follow the opposite behaviors through the wage distributions of KIS and LKIS activities in the service sector. In the case of KIS employment, they follow an upward trend along the wage distribution which indicates the existence of the glass ceiling in KIS. On the other hand, wage decomposition reveals an apparent sticky floor in most parts of the distribution, in the case of LKIS.

5. Conclusion

The service sector, particularly the KIS and the ICTs sub-sectors, have labor conditions that, a priori, favor female employment, and can potentially increase both the women's labor force participation and their relative wages. This paper aims to reveal whether KIS activities fulfill their potential of improving women's labor conditions, as well as their potential to diminish the gender wage gap in the Turkish service sector. With this purpose, the gender wage gap is examined as a measure of a number of personal and labor characteristics, and additionally as a regional control variable, compared against LKIS, the non-service, and the overall service sectors, both at the mean of and across the wage distribution. Employing the Oaxaca-Blinder decomposition along with a Heckman filter enables us to attempt to fix the selection bias, and to reveal the part of the mean gender wage gap that can be explained by the labor preferences of women in the labor market, as well as the part that cannot be explained by these preferences, or else can be attributed to discrimination. As the second part of the analysis, a Melly decomposition is employed to explore the gender wage differentials along the wage distribution, with the effects of characteristics and discrimination being examined separately, which makes it possible to uncover whether or not unequal conditions exist between women at different wage levels – unequal conditions either in the form of the traditional wage gap being located at the higher end of the distribution (glass ceiling), or at the low end of the distribution (sticky floor). The examination of the wage inequality between men and women both at the mean and along the wage distribution provides a holistic perspective on women's positions in KIS, relative to other sectors.

The preliminary analyses showed that, in general, KIS activities are characterized by significantly higher wage levels, higher educational levels, and more non-manual skills; they often provide better working conditions, such as more managerial responsibility, more indefinite contracts and full-time jobs, and employ more women. On the other hand, despite the fact that women contribute more to KIS labor performance due to personal attributes s

such as being younger and holding higher educational qualifications on average than men, KIS activities provide a comparatively disadvantaged environment for female employees in terms of employment quality - with fewer full-time jobs, less managerial responsibility, shorter tenure, and higher labor instability in terms of having more fixed term labor contracts. Although KIS activities offer relatively high wages to women, KIS have the greatest gender wage differences in both absolute and relative terms.

Oaxaca-Blinder decomposition results revealed that unexplained components of the gender wage differential are at their highest in absolute terms in the case of KIS. Holding higher education, experience, higher tenure levels, being a manager and/or professional, holding a non-manual occupation, as well as residing in a region with wages above the mean are the characteristics that contribute to diminishing the gender wage gap in KIS. On the other hand, holding a part-time job or a temporary contract, being employed in a small business, and holding administrative duties are the labor characteristics that widen the gender wage inequality in KIS activities. In the case of LKIS, having a non-manual occupation and residing in a region with wages above the mean are the only variables with a wage gap reducing impact, along with holding a higher education and a high number of years of experience in LKIS activities. The gender wage gap is found to be smaller in non-services activities, when compared to KIS and service activities. Higher education, higher years of experience, longer tenure, being employed in a small business, being a manager and/or professional, holding a non-manual occupation, and residing in a region with wages above the mean are the attributes that reduce the gender wage differences in non-service activities. The service sector shares similar characteristics with the KIS sub-sector in terms of explained component contributions to gender wage differences, which might indicate towards a dominance of KIS in affecting gendered wage differences across the overall service sector.

Examining the wage decomposition along the wage distribution reveals that the gender wage gap and discrimination follow the opposite behaviors along the wage distribution in KIS and LKIS activities in the service sector. In the case of KIS employment, gender wage differences and discrimination increase alongside wage levels, which indicates the existence of a glass ceiling in KIS. On the other hand, there is an apparent sticky floor in most parts of the wage distribution when it comes to LKIS activities, with a higher gender wage gap and greater discrimination at lower wage levels. As regards the case of wage decomposition at the mean, the service sector produces results similar to those of KIS activities within the quantile wage decomposition, which may imply that the characteristics of the KIS sub-sector dominate the situation in the whole service sector in terms on gender wage differentials.

Based on these findings, it can be inferred that non-service and LKIS sectors have better performances than KIS in terms of the employment quality and magnitude of the gender wage difference. In spite of the relatively high wages of women in KIS employment, the KIS sub-sector offer worse employment outcomes for women than men via unequal wage treatments, and poorer working conditions than the overall Turkish service sector; the sub-sector thus fails to fulfill its potential to diminish the gender wage difference and to improve women's working conditions. The gender wage gap itself and potentially discriminatory behavior persist at higher wage levels in KIS, and their close association at all wages levels is an indicator of the significant

magnitude of the discrimination. In light of these findings, promoting the higher education of women and providing permanent solutions for the social and economic issues that direct women towards part-time and fixed term jobs might serve as the potential economic and social policy solutions. The findings of this study point towards a need for further investigation, to create a better understanding of the wage, labor, and personal characteristic differences between men and women, via a detailed investigation of job and skill compositions of women in KIS. Furthermore, the distinctive behavior of the gender wage gap at the very beginning and end of the overall wage distribution in all sector groups requires a detailed investigation of the quantiles used in this study, in terms of the personal and labor characteristics of employees.

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