Gendergap in United States

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Abstract

The aim of this study is to examine whether there is gender inequality for wage,unemployment by age, unemployment by education and employment in the United States. Gender, time and economic activities were examined as the main variables affecting employee wages. Unemployment by age and education, employment status were also examined on gender inequality. Gender differences occur in working life as well as in social life. In every sector, in every profession, in every position, the most important gender difference is in wages for labor. In addition, unemployment status varies according to the education level and age of the people. However, being unemployed at the same education level or even at the same age can be unfair. In all these unequal situations, it is government policies and employers that will give priority to the solution. As stated in the analysis result, women are paid less than men, even if they engage in the same economic activity.In unemployment by education level where the gender difference is significant, the inequality between the genders continues. Although there is no significant difference, women lag behind men in unemployment by age and employment.In order for a country to develop socially and economically, it must eliminate the inequality in the wages,unemployment and employment and be fair at the beginning.

1 Introduction

Whether or not women have equal rights in the workforce has been a matter of debate since the past. Even if they have equal skills, women's working at lower wages than men is one of the biggest socio-economic problems of countries. Unequal policies of countries or sectors negatively affect women's labor supply, female unemployment rates and women's economic power. At this point, unequal opportunities break the trust and desire of women employees and drop them from the workforce. These unequal labor policies and the unfair behavior of the sectors in almost every country in the world negatively affect productivity regardless of whether they are female-dominated or male-dominated sectors. According to the analysis,in the United States, gender wages by economic activity and time, unemployment by education level, unemployment by age and employment data were examined used from the International Labor Organization (ILOSTAT) resource and supported the data with literature review. This

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study based on the hypothesis "Gender equality does not apply to wage, unemployment by education level, unemployment by age and employment in the United States.", and the data were analyzed with T-test.

1.1 Literature Review

Why women achieve less wages compared to men of similar qualifications raises questions in the minds of economists for a period and has been studied from a variety of perspectives.It is a well-studied touches to revise the issues from the perspective of occupations and especially the effect of occupational discrimination according to gender. Although unknowns maintain about how discrimination affects women's wages with this question:"Were women's occupations really less capable than men's, or was the pay completely schismatic?", for a long period, occupational segregation was seen as major factor of low women's payments.(Bizopoulou, 2016),this shows that the fact that male and female workers receive different pay is an nearly global property of the work force market,without having to look at where female workers work. It has been determined that occupations dominated by women pay less than occupations dominated by men, despite having the same cability grade.(A. Hegewisch et al., 2010) Women's median earnings are less compared to men's in almost all occupations, regardless of whether they work in occupations mainly dominated by women or men, or both.(E. Hegewisch Ariane ve Mefferd, 2021) Considering the being of gender pay and differences related with occupation,there is a natural tendency to assume that there is a connection between these two data sets. Essentially, the oldest theories of gender differences assumed such a connection among earnings and professional structure. The depth of the theory that came to be known as the occupational distinction hypothesis goes back at least to Edgeworth (1922) and Rathbone (1917). The argument applied to gender differences is that definite occupations are mainly reserved for women, however men are independent in the occupation of their selection. In conclusion,as women were forced into simple occupations,the increase in the supply of female workers in women's jobs and decrease female workers' wages. Wage increases occurred as the supply of male occupations decreased.(Polachek, 1987) Obvious gender biases persist through a wide range of industries and occupations, which are more evident at the sub-industry level. Females, who have a particularly great part in the health, welfare, education, training and retail workforce, on the contrary, have a very weak part in mining, electricity, gas, water and construction.

Moreover,females compose to the wide majority of clerical, administrative, community and personal service as employees. The care sector and social services, particularly childcare and aged care, are extremely feminized sectors and professions. As well as women earn a lower hourly wage than men in most occupations, the differences are nearly as large in feminized profession such as community and personal service employees and as in male controlled professions, such as technicians and trade employees. Likewise, the wages in health care and social assistance, a feminized sector, have slightly greater difference wage than in mining and construction, which are male-dominated sectors. Also, leastways at a large standard,there is no robust design of expressively poorer wages for full-time employees in feminized professions and industries. United with proof that the gender pay gap can be widely expressed by individual features at lower pay levels, it shows that females have great

probability than males to be classified under the occupational hierarchy, without taking care of ability.(Broderick, 2012)

It is important to explain why women are relegated to a lower economic position. When these patterns arise from unequal opportunities, due to unjust hiring exercises, it means that the economy is failing to fully and appropriately employ highly productive workers. Conversely, if unfair economic outcomes result from varying individual choices despite fair opportunities,followed by government intervention can cause a damaged allotment of resources and unproductivies in the economy. If productive efficiency is hindered instead of helping disadvantaged groups, then in the long run everyone suffers.(Polachek, 1987)

2 Data

The data used in the study were obtained from the International Labor Organization (ILOSTAT) database for the years 2003-2022 covering the United States. Wage is the dependent variable of the country that is the data source was analyzed according to the independent variables such as sex, economic activity, time, education level, unemployment by education level, age, unemployment by age and employment.

In this study, the data were analyzed on the basis of sex. Summary statistics tables for both sex are presented below. In this study,(Table1) contains summary statistics for male and (Table2) contains summary statistics for female.

Table 1: Summary Statistics for Male

	Mean	Std.Dev	Min	Median	Max
Employment	11020337.64	5690138.55	4745.63	12282342.00	18335082.00
Unemployment.by.Age	28208.67	13751.79	5.00	27302.00	46813.00
Unemployment.by.Education.Level	31594.63	12239.18	13.39	31701.50	47150.00
Wage	3925.24	803.74	2257.55	3931.56	5733.79

According to (Table1), the mean of employment is 11020337.64 and the minimum value ranges from 4745.63 to the maximum value 18335082.00. The mean of unemployment by age is 28208.67 and the minimum value ranges from 5.00 to the maximum value 46813.00. The mean of unemployment by education level is 31594.63 and the minimum value ranges from 13.39 to the maximum value 47150.00. The mean of wage is 3925.24 and the minimum value ranges from 2257.55 to the maximum value 5733.79.

According to (Table2), the mean of employment is 9854605.23 and the minimum value ranges from 8313.60 to the maximum value 16030439.00. The mean of unemployment by age is 29674.82 and the minimum value ranges from 6.00 to the maximum value 47331.00. The mean of unemployment by education level is 27112.74 and the minimum value ranges from 7.00 to the maximum value 47150.00. The mean of wage is 3073.79 and the minimum value ranges from 1763.4 to the maximum value 4776.85.

Table 2: Summary Statistics for Female

	Mean	Std.Dev	Min	Median	Max
Employment	9854605.23	5022743.57	8313.60	11086830.00	16030439.00
Unemployment.by.Age	29674.82	13175.81	6.00	30727.50	47331.00
Unemployment.by.Education.Level	27112.74	14484.27	7.00	28428.50	47150.00
Wage	3073.79	678.34	1763.40	3047.01	4776.85

3 Methods and Data Analysis

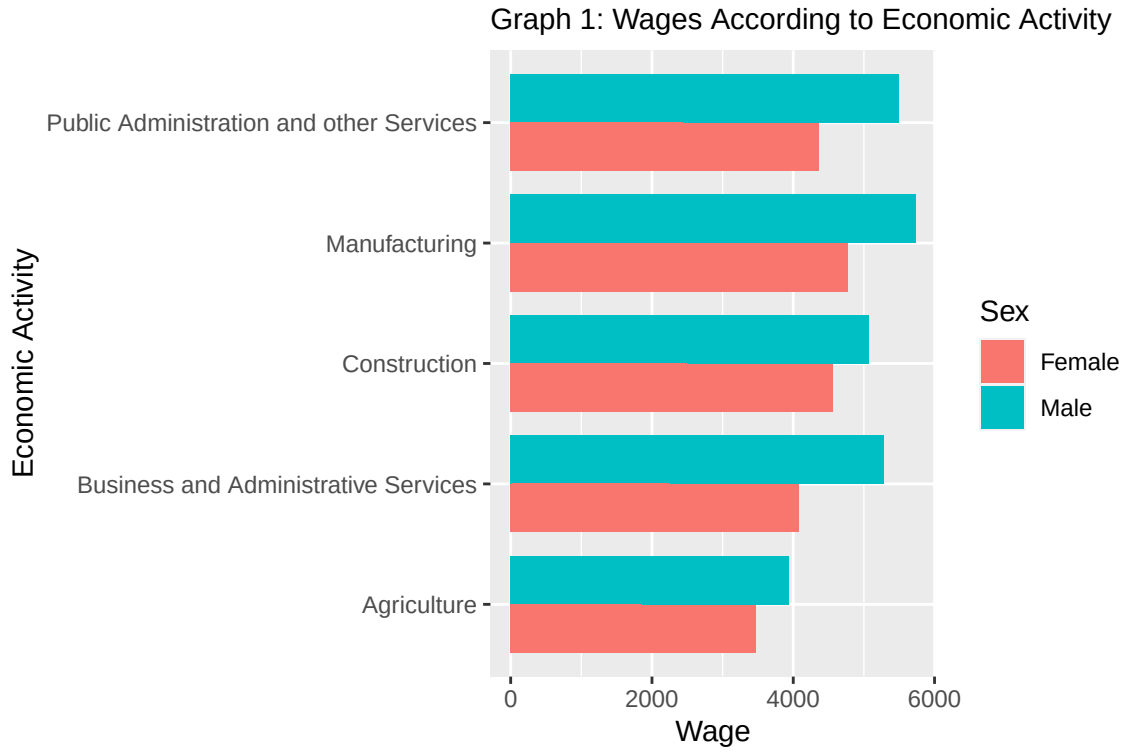
The method used in the study is the t test for independent samples.

The main hypothesis of the study:

H0: Gender equality applies to wage,unemployment by education level, unemployment by age and employment in the United States.

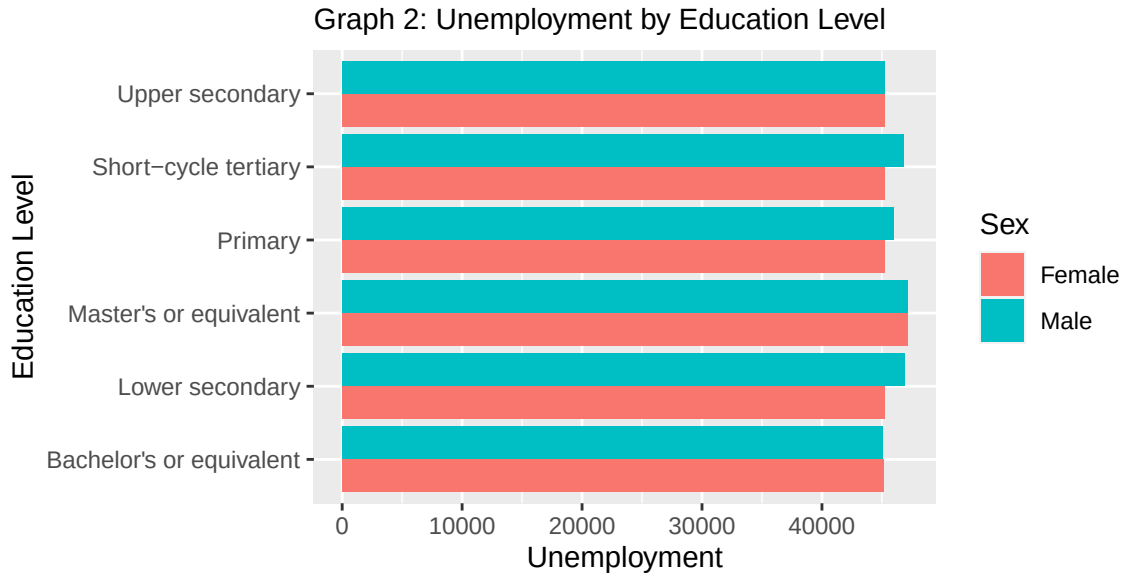
H1: Gender equality does not apply to wage, unemployment by education level, unemployment by age and employment in the United States.

Below are graphs that include wage workers' gender, economic activity, unemployment rates by education level, unemployment rates by age, wages by time and employment levels. Graph 1 below shows the average wages earned by sexes in different economic activities.

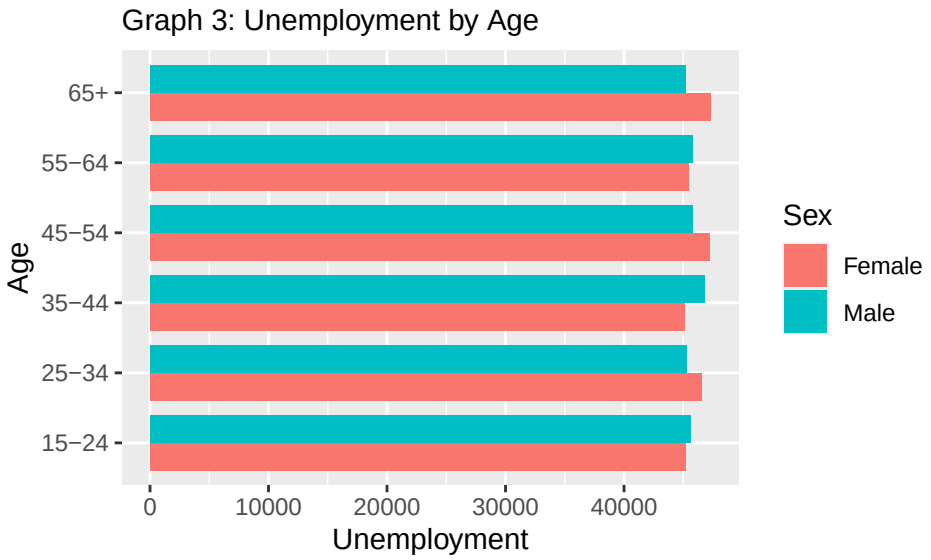


According to the graph 1, While the highest wage for male in Public Administration and other Services is 5489.39, the highest wage for female in the same economic activity is 4366.38.

While the highest wage for male in Manufacturing is 5733.79, the highest wage for female in the same economic activity is 4776.85. While the highest wage for male in Construction is 5072.94, the highest wage for female in the same economic activity is 4561.45. While the highest wage for male in Business and Administrative Services is 5288.26, the highest wage for female in the same economic activity is 4079.62. While the highest wage for male in Agriculture is 3932.19, the highest wage for female in the same economic activity is 3466.58. When the general summary of the graph is examined, it is seen that the wages of females are less than the wages of males in all economic activities.

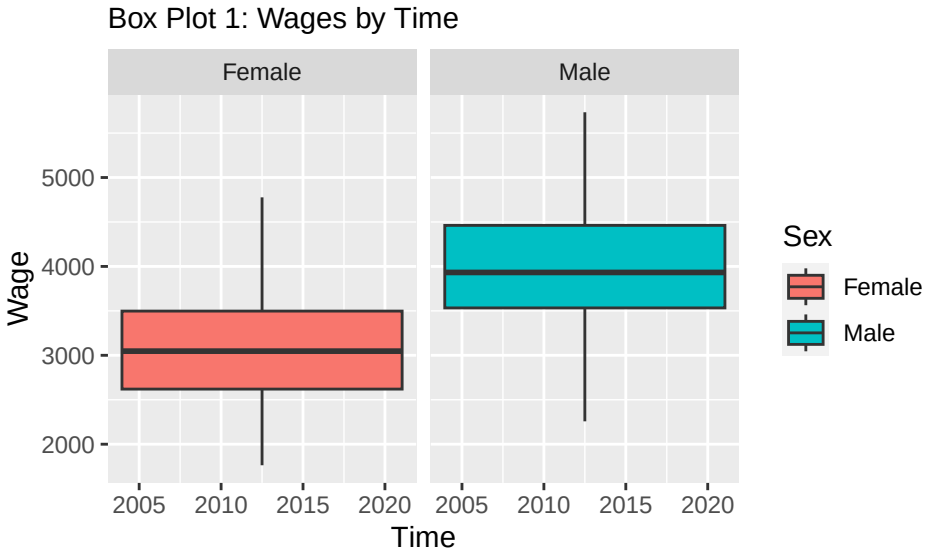


According to the graph 2, male and female unemployment was examined according to education level. While maximum value of unemployed men are 45962 at primary education level, maximum value of unemployed women are less than men with 45237. While maximum value of unemployed men are 46935 at Lower secondary education level, maximum value of unemployed women are less than men with 45243. While maximum value of unemployed men are 45242.00 at upper secondary education level, maximum value of unemployed women are higher than men with 45265. While maximum value of unemployed men are 46813 at Short-cycle tertiary education level, maximum value of unemployed women are less than men with 45234. While maximum value of unemployed men are 45079 at Bachelor's or equivalent education level, maximum value of unemployed women are higher than men with 45172. At Master's or equivalent education level, maximum value of unemployed male 47150 and maximum value of unemployed female are the same with 47150 as males. When we look at the general table, unemployed male is more than unemployed female.

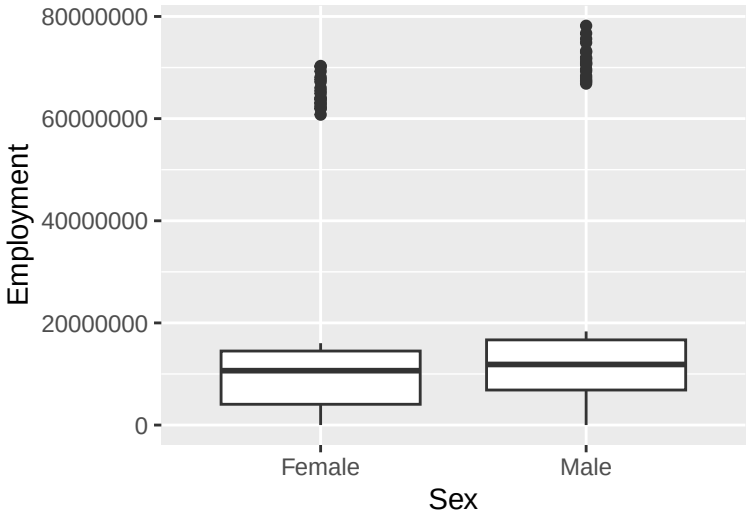


According to graph 3, male and female unemployment was examined according to age. While the maximum number of unemployed men in the 15-24 age group is 45597.00, the maximum number of unemployed women is less than men, with a maximum number of 45177.00. While the maximum number of unemployed men in the 25-34 age group is 45236, the maximum number of unemployed women is 46569, which is higher than that of men. While the maximum number of unemployed men in the 25-34 age group is 46813, the maximum number of unemployed women is 45081, which is less than men. While the maximum number of unemployed men in the 45-54 age group is 45748, the maximum number of unemployed women is 47178, which is higher than that of men. While the maximum number of unemployed men in the 55-64 age group is 45748 , the maximum number of unemployed women is 45444 , which is less than that of men. While the maximum number of unemployed men in the 65+ age group is 45171, the maximum number of unemployed women is 47331, which is higher than that of men. With the overall results, women have a higher number of unemployed than men.

Below are the box plots that analyze wage by time and employment by sex.



In Box plot 1, between 2003 and 2022, the minimum wage for male is 2257.55 and the minimum wage for female is 1763.40. Thus, the lowest wage is observed for female as 1763.40. In Box plot 1, between 2003 and 2022, the maximum wage for male is 5733.79 and the maximum wage for female is 4776.85. Thus, the highest wage is observed for male as 5733.79. The median male wage was found to be 3931.56 and the female wage median to be 3047.01. A significant difference observed in the wage distribution of male and female.



Box Plot 2: Employment by Sex

Box plot 2 shows the employment numbers of male and female. Outliers in data of both sexes were examined by ignoring them. The median of the box showing the employment number of women is 11086830.00, and the median of the box showing the employment number of men is 12282342.00. The male employment median is not outside the box showing the female employment distribution. In this case, no significant difference can be observed in the employment distribution of male and female.

Independent sample t-test results for gender equality of male and female employees are

	variable	p_value	t_value
1	Employment	0.09	-1.68
2	Unemployment.by.Age	0.40	0.84
3	Unemployment.by.Education.Level	0.01	-2.59
4	Wage	0.00	-8.10

Table 3: t-test

given in (Table3). The p value results for Employment and Unemployment by age are not statistically significant. Also, the p value for unemployment by education level and wage were observed to be statistically significant. In particular, it was found as a result of the test analysis that the gender pay gap was quite high. Gender inequality applies in United States to wage and unemployment by education level. It has been seen that females are paid less than males at 0.00 p value and have more unemployed than males at the same education levels at 0.01 p value. However, gender inequality does not exactly apply in United States to employment and unemployment by age.

$$t_w = \frac{M_1 - M_2}{S_p}$$

Two paired t-test equation was applied in the analysis, M values represent gender medians and S values represent standard deviations.

4 Conclusion

Gender inequality in wage, unemployment and employment was examined in this study as presented in tables and box plots.T-test was used to examine gender inequality in wage, unemployment and employment data. Wage, which is the dependent variable in the data set and independent variables such as sex, time, economic activity, education level, unemployment by education level, age, unemployment by age and employment were examined. As a result of the analysis,women are paid less than men for every economic activity. According to the analysis, women have more unemployed than men at only Bachelor's or equivalent education level, and the gender gap is quite significant. In the analysis, women were mostly unemployed in the 25-34, 45-54 and 65+ age groups than men, and no significant difference can be observed. In the results obtained, women had less wages than men in the 2003-2022 time periods, and it was observed that the difference was quite significant. Analysis results did not show a significant difference between the two genders for employment. Although there was no significant difference in unemployment by age and employment in the analysis, it was observed that women lagged behind men in employment and had more unemployed than men in unemployment by age.

As a result of the analysis made according to gender inequality, the analysis result was indifferent between the H0 and H1 hypotheses and could support that gender equality does not apply to wage and unemployment by age in United States.

5 References

Bizopoulou, A. (2016). *Mesleklerde görev profilleri ve cinsiyete dayalı ücret farkları*. Work sheet, 1–22.

Broderick, E. (2012). Politika forumu: Avustralya işgücü piyasasındaki kadınlar. *Avustralya Ekonomik İncelemesi*, *45*(2), 204–210.

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

Hegewisch, E., Ariane ve Mefferd. (2021). Meslek, ırk ve etnik kökene göre cinsiyete dayalı ücret farkı 2020. *Kadın Politikaları Araştırma Enstitüsü, Https://Iwpr. Org/Wp-Content/Uploads/2021/03/2021-Occupational-Wage-Fap-Brief-V2. Pdf*.

Polachek, S. W. (1987). Meslek ayrımı ve cinsiyete dayalı ücret farkı. *Nüfus Araştırması Ve Politika İncelemesi*, *6*, 47–67.