Data Analysis 2- Assignment 1

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Introduction

Wages, Sex, and Highest Grade Completed: I expect to see an impact on wage gap and the highest degree completed. I want to explore whether this difference prevails regardless of gender. The question here would be, does it matter whether you are male or female if the highest degree you have completed is the same across both genders?

As an analyst I was assigned a task to perform a comparative analysis of differences in the hourly wage rate received by men and women as Chief Executives. I filtered the data as per my occupation to be able to conduct an accurate analysis. I included education level bachelors and above, age to be 35 and above and working hours to be 40 and above. I also created dummy variables for education degrees and calculated the natural log of wages using hourly wages.

Limitations

It is important for me to highlight the limitations and issues with selecting this occupation. I believe that using hourly wages or even weekly wages for this occupation is not the best approach. CEOs usually get paid in a combination of salary, bonus, and stock based on performance. This does mean that calculating hourly wages for CEO is incorrect or impossible but there were better occupations in the list that suited this task such as Data Entry Keyers. I was simply curious to see what uncovers as I go along and if I come across anything surprising that is worth exploring further with my chosen occupation.

Interpretation & Analysis

To check the unconditional gender gap, I used hourly wages for men and women. I also used log of hourly wages to show the gap and compare it with our regression model(reg1).
Regression 1 in figure 6 reveals that women as Chief Executives tend to earn 10.34% less than the men working as Chief Executives. It has a SE of 0.04 giving a confidence interval of [-0.18, -0.03]. We can also observe the p value which is 0.0048 which is < 0.01. For **Regression 2** I have taken Bachelor and Master as they include the greatest number of observations shown in figure 3. With education interplaying with gender, we can see that females with a bachelors and masters tend to earn 10.07% less than their male colleagues. The SE here is 0.04 with a 95% CI between [-.017, -0.03] This shows that at least with a Bachelor or Master in hand women do not brighten their chances of being equally paid. **Regression 3** is modelled using all the other education degrees excluding Bachelor. The wage gap slightly worsens with degrees beyond Bachelor with women earning 10.10% less than men. For **Regression 4** I have attached interactions terms.

Summary

Figure 1A

sex		Mean	SD	Min	Max	N
Male	h_wage	47.00	15.00	3.20	72.12	663
Female	h_wage	43.72	17.05	7.10	72.12	211

Figure 1B

sex		Mean	SD	Min	Max	N
Male	lnw	3.78	0.40	1.16	4.28	663
Female	lnw	3.68	0.48	1.96	4.28	211

Figure 2

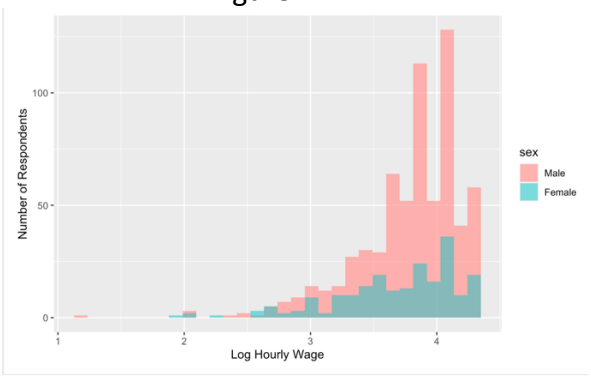

Figure 3

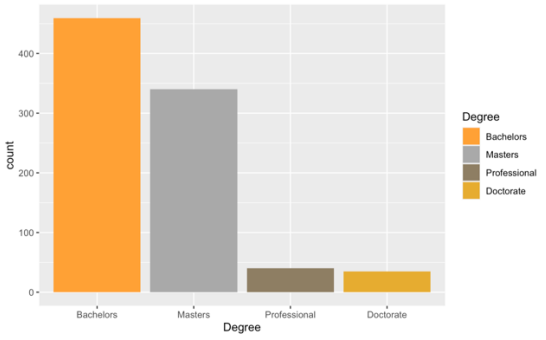

Figure 4

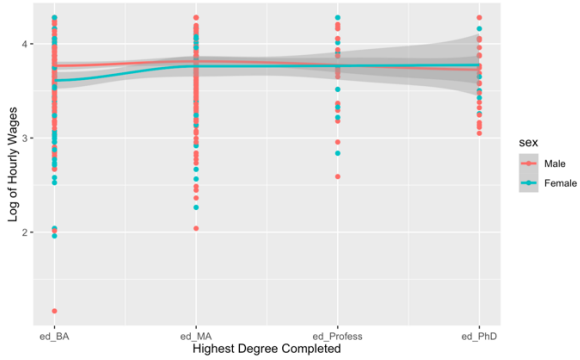

Figure 5

	(1)	(2)	(3)	(4)	(5)
(Intercept)	3.7837 ****	3.7759 ****	3.7535 ****	3.7672 ****	3.9791 ****
	(0.0155)	(0.0463)	(0.0214)	(0.0225)	(0.1203)
female	-0.1036 ***	-0.1007 ***	-0.1010 ***	-0.1553 ***	-0.1049 ***
	(0.0366)	(0.0364)	(0.0364)	(0.0530)	(0.0365)
ed_MA		0.0485	0.0710 **	0.0466	0.0589
		(0.0502)	(0.0297)	(0.0325)	(0.0661)
ed_BA		-0.0225			-0.0132
		(0.0500)			(0.0660)
ed_PhD			0.0057	-0.0428	
			(0.0656)	(0.0742)	
ed_Profess			0.0373	-0.0099	0.0313
			(0.0688)	(0.0791)	(0.0894)
female:ed_MA				0.1029	
				(0.0763)	
female:ed_Profe ss				0.1657	
				(0.1564)	
female:ed_PhD				0.2064	
				(0.1519)	
age					-0.0042 **
					(0.0020)
N	874	874	874	874	874
R2	0.0110	0.0173	0.0174	0.0215	0.0230