

## Wage Disparity Amongst Genders in the Health Practitioner Industry

GitHub Link: <https://github.com/Iandrewburg/DA-2-ASSIGNMENT-1/tree/main>

### Data Overview:

- Analysed occupation codes 3000-3540, focusing on health practitioners.
- Created variables: gender (numeric binary), weekly wages, log of wages.

### Descriptive Analysis:

- Wage distribution: Initially right skewed, normalized after log transformation.
- Earnings histogram by gender: Indicates higher average weekly earnings for males and a higher number of females in the sample.

### Unconditional Wage Gap Analysis:

- OLS regression model indicated a significant wage gap, with females earning lower wages (decrease of 0.132 in log wages,  $p < 0.01$ ).
- Model's low R-Squared (0.8%) implies gender alone is not a comprehensive indicator of wage disparities.

### Impact of Education Levels:

- Analysed BA, MA, Professional, and PhD degrees.
- Higher education correlated with increased weekly earnings.
- Males out-earned females across all education levels, but with overlapping ranges, indicating some uncertainty in the exact disparity.

### Regression Models Summary:

- Conducted 11 regression models, but will reflect on the last three here, which explore education levels, gender, and wages.
- Model 10 (Females): Education level positively impacts log wages, explaining 13.8% of variance.
- Model 11 (Males): Education level influences log wages (9.7% increase), professional degree significantly boosts wages.
- Model 12 (Gender Interaction): Education increases wages by 9.7%, but gender wage gap (27.6%) not statistically significant. Overall, degrees do not significantly affect gender wage disparities.

### Predictive Modelling and Interpretation:

- Confidence intervals in predictive models indicate consistent higher earnings for males across all education levels.
- Professional degrees show the least overlap in gender earnings, suggesting a more pronounced disparity at this education level.

### Conclusion:

- Clear wage disparities exist between genders in the healthcare practitioner industry.
- Further research needed to explore other factors influencing this gap and to develop better predictive models.
- Levels of education were found to not significantly affect gender wage disparities.

Assignment 1  
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## Regression Models 10, 11, and 12

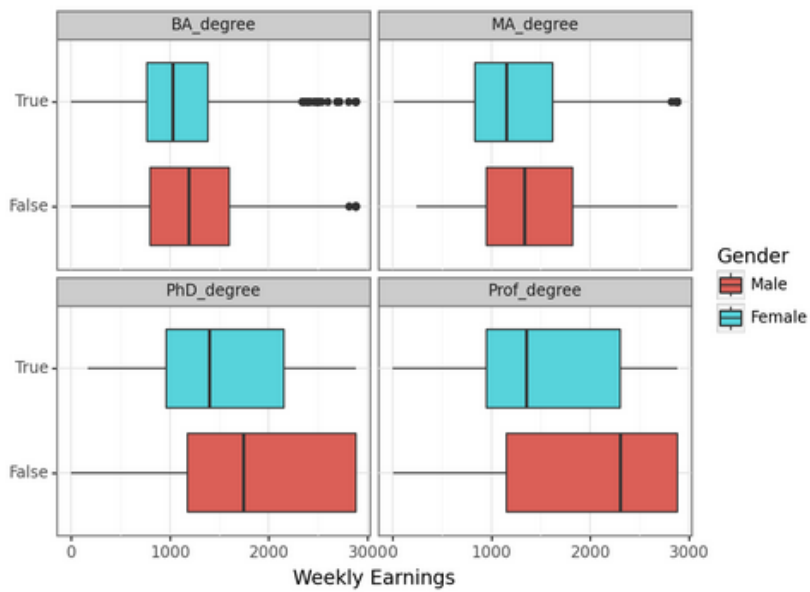
Dependent variable: <i>lnw</i>			
	Women	Men	Interactions
	(1)	(2)	(3)
Level of Education	0.102*** (0.008)	0.097*** (0.017)	0.097*** (0.017)
BA_Degree	0.108*** (0.023)	0.084 (0.056)	0.084 (0.056)
MA_Degree	0.112*** (0.033)	0.079 (0.070)	0.079 (0.070)
Prof_Degree	0.048 (0.061)	0.157* (0.086)	0.157* (0.085)
PhD_Degree	0.033 (0.053)	0.010 (0.106)	0.010 (0.106)
Female			-0.276 (0.772)
Female:BA_Degree			0.024 (0.061)
Female:MA_Degree			0.033 (0.078)
Female:Prof_Degree			-0.108 (0.105)
Female:PhD_Degree			0.023 (0.119)
Female:Level of Education			0.005 (0.019)
Constant	-1.190*** (0.322)	-0.914 (0.703)	-0.914 (0.702)
Observations	7220	1988	9208
R <sup>2</sup>	0.138	0.121	0.140
Adjusted R <sup>2</sup>	0.137	0.118	0.139
Residual Std. Error	0.543 (df=7214)	0.648 (df=1982)	0.568 (df=9196)
F Statistic	253.348*** (df=5; 7214)	71.895*** (df=5; 1982)	149.835*** (df=11; 9196)
Note:	*p<0.1; **p<0.05; ***p<0.01		

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### Boxplot:

Weekly earnings based on Sex (Grouped by Education)



### Point Plot with Error Bars:

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Predictive Model for Earnings based on  
Gender and Level of Education

