EGYPT SALARY GAP ANALYSIS

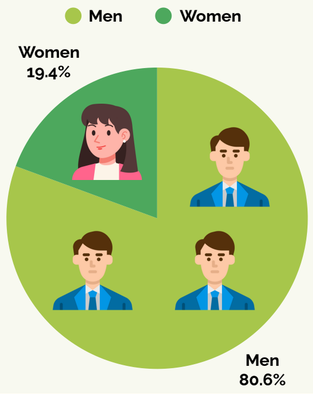
Byte Busters

Introduction

This project explores if men and women are paid equally in Egypt's tech industry and whether any pay gap remains after considering job role and experience.

Demographic

- Population: Tech professionals in Egypt
- Dataset: 2,649 records from 2024 Tech Market Survey



Hypothesis

Hypothesis 1 (Basic)

- Test: Welch's t-test
- Null (H_0): There is no difference in mean salaries
- Alternative (H_1): There is a significant difference in mean salaries

Hypothesis 2 (Controlled)

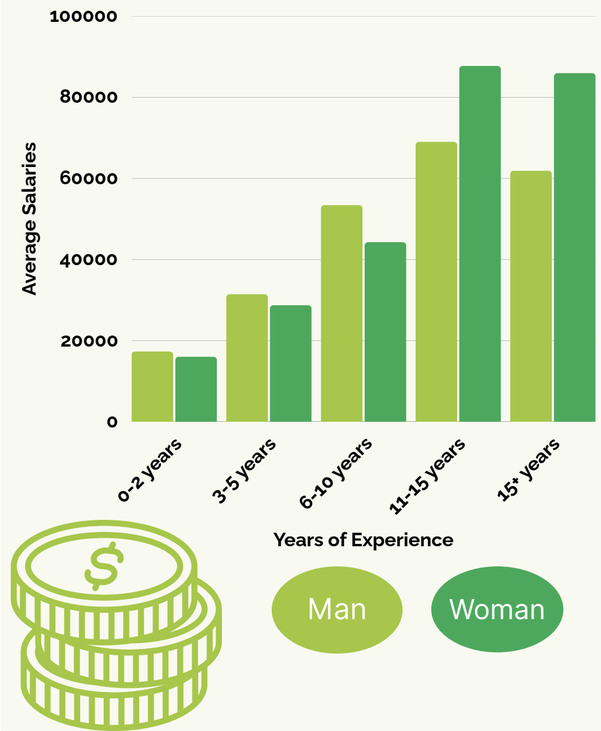
- Test: Blinder-Oaxaca
- Null (H_0): After controlling for job title, experience, level, etc., there is no significant difference.
- Alternative (H_1): Even after controlling for those, a pay gap still exists.

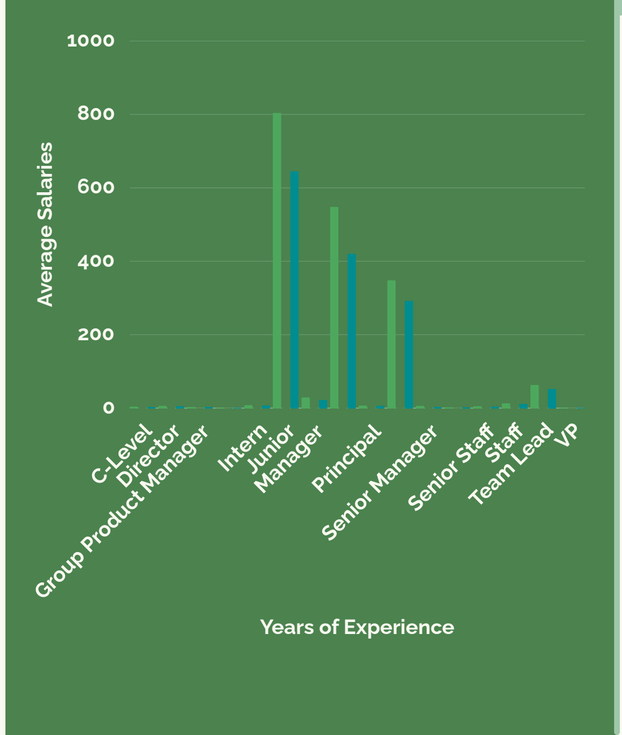
Methodology

- Mean Salary Test → Welch's T-test for unequal variance
- Controlled Gap → Blinder-Oaxaca decomposition
- Cost of Being a Woman → Regression model for expected vs. actual salaries

Objective

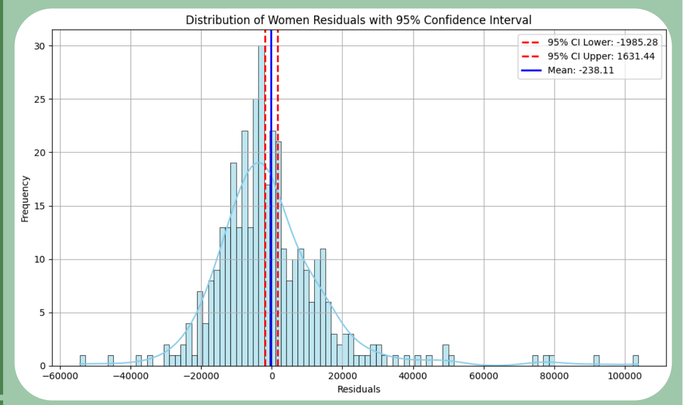
1. Is there a statistically significant difference in salaries between men and women?
2. Does the gap persist after controlling for factors like experience and title?
3. What is the Cost of Being a Woman in the Egypt tech industry in EGP?





Hypothesis testing steps

- Calculated mean and median salaries by gender to identify initial differences.
- Applied Welch's t-test to assess statistical significance of salary gaps, accounting for unequal variances ($p < 0.05$).
- Conducted Oaxaca-Blinder decomposition to quantify explained (e.g., experience, role) and unexplained (e.g., discrimination) portions of the salary



Conclusion

1. There is no statistically significant evidence of there being a wage gap between men and women in Egypt's tech market
2. In fact Women on average earn more than men after 10+ years of experience
3. After conducting a 95% confidence interval we found that there isnt enough evidence to conclude that life costs more as a woman in the tech field