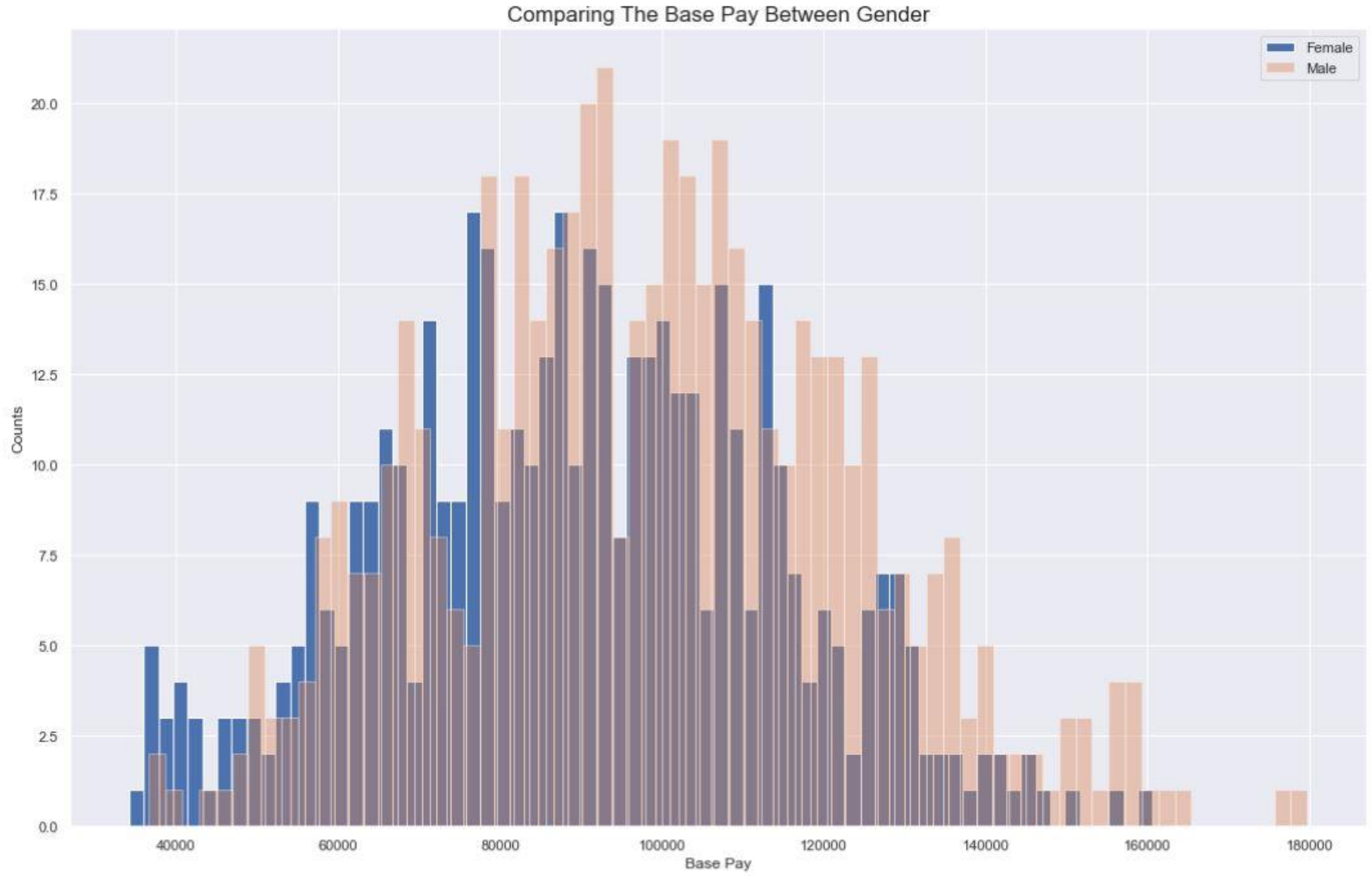
THE GENDER PAY GAP

https://www.kaggle.com/nilimajauhari/glassdoor-analyze-gender-pay-gap

Agenda:

I am a HR consultant working for a 5000 strong public relations company. I received a call from the head of the employee's union presenting woman's rights in the company to discuss about gender pay gap……or rather complaining….

Why is there a gender pay gap in our company?...Time for EDA!



- The gender pay gap is 8.46% or $8300/year
- The P Value using the mean difference (between Female basepay and Male basepay) is <0.05 indicating that the pay gap is significant.
- Can we conclude the Gender Pay Gap is really 8.46%?
- No lah! We need to do EDA first!

Calm down, could you tell me more about yourselves? May be we can do a more accurate Gender Pay Gap analysis?

Data Scientist

the age

41

Masters

Amy

Financial Analyst

High School

the age

49

Connie

IT

the age

50

PhD

Sara

This is your gender pay gap……

3.8%

Data Scientist

the age

41

Masters

Amy

-31.7%

Financial Analyst

High School

the age

49

Connie

1.6%

IT

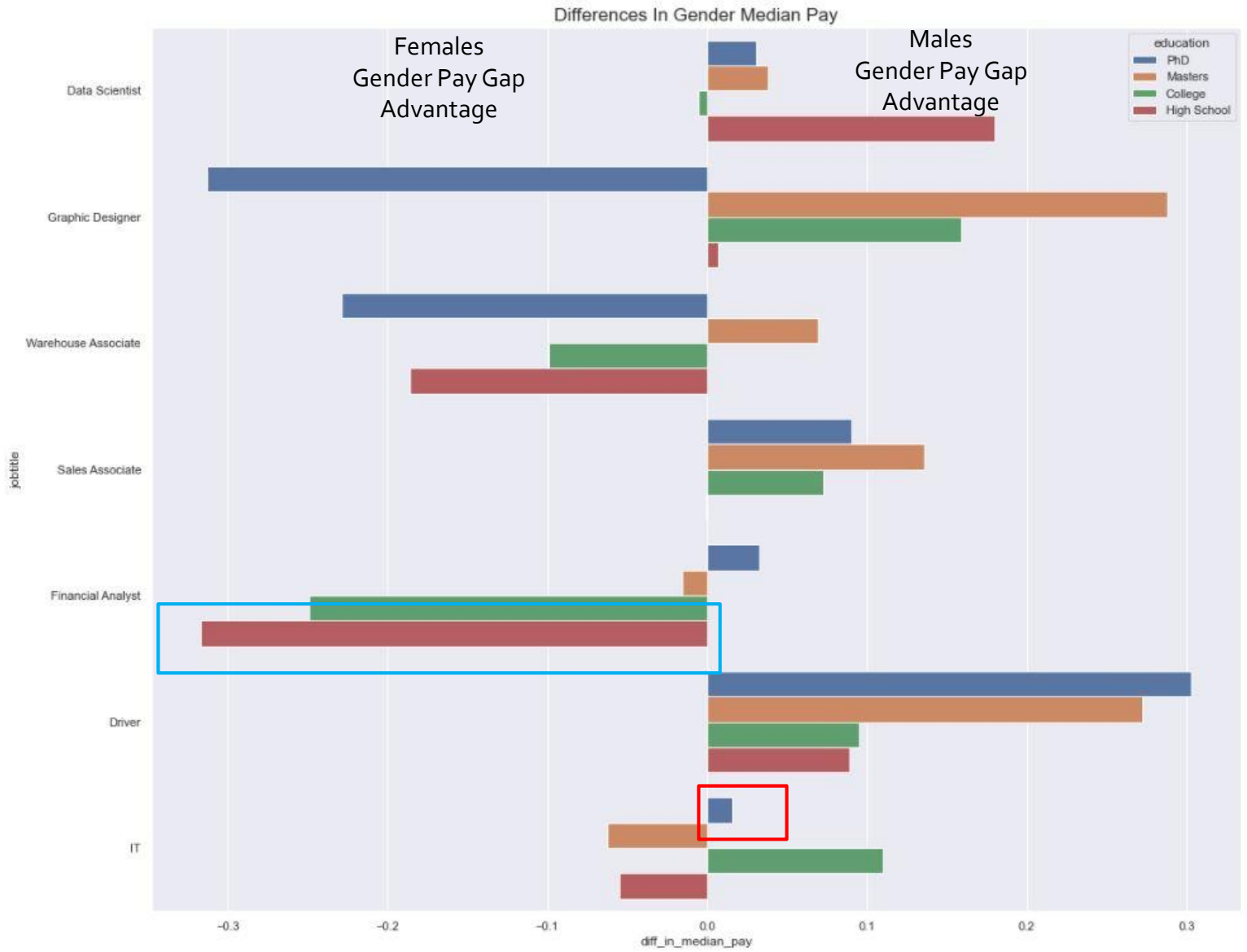
PhD

the age

50

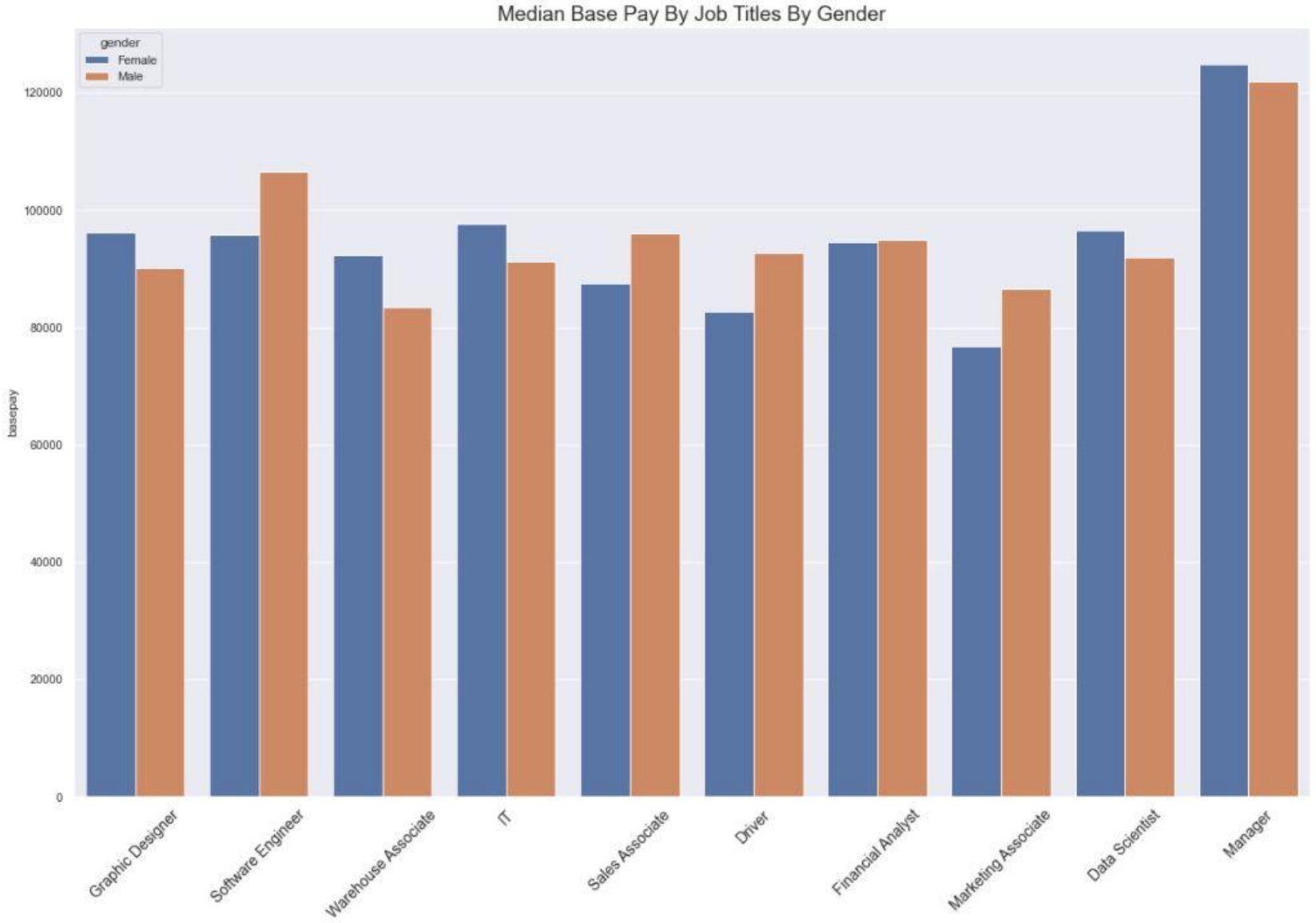
Sara

To See The Overall Picture….



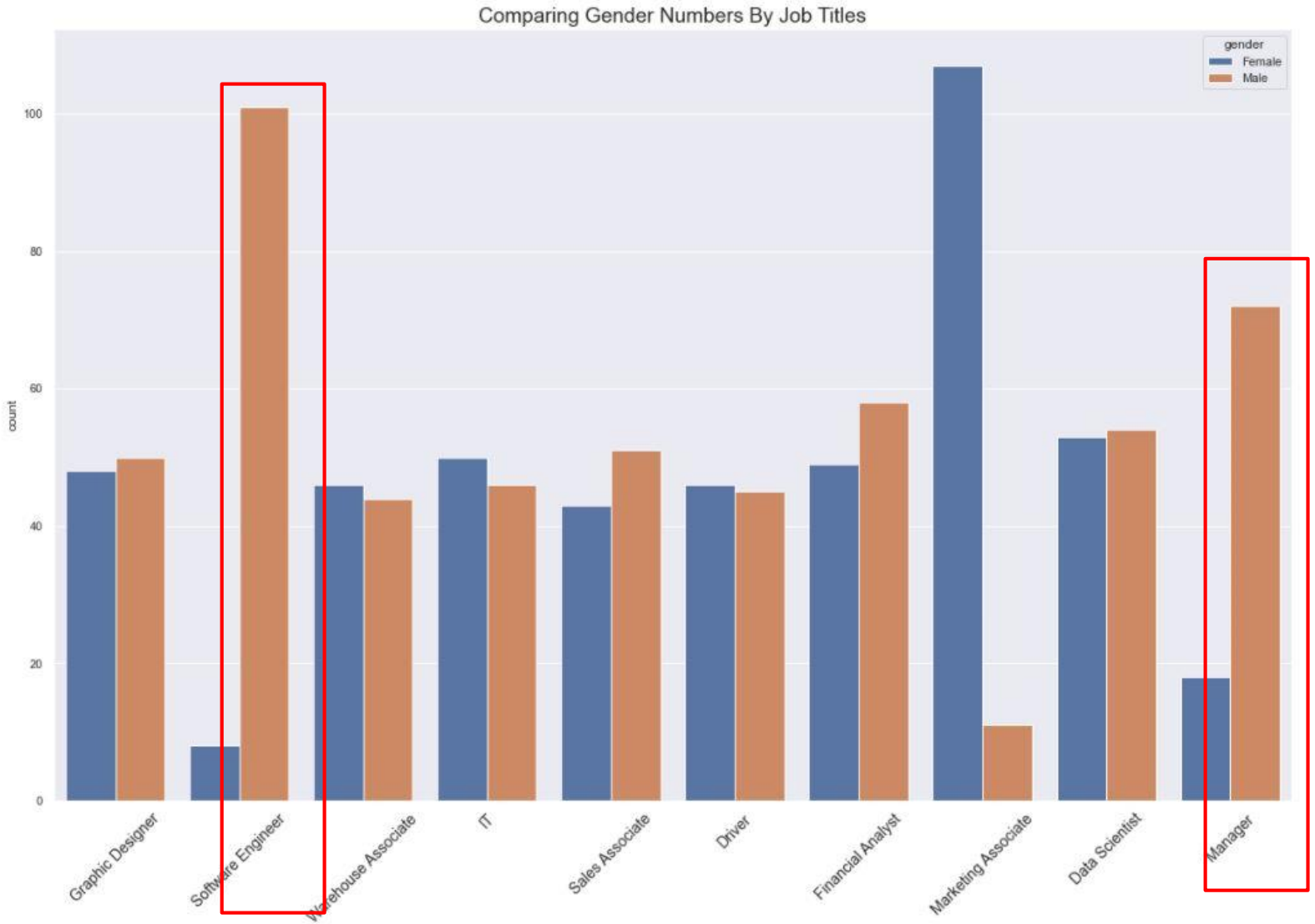
- Gender pay gap depends on education and job titles…
- For Connie who is a Financial Analyst will have a 31.7% Gender Pay Gap advantage if you have a High School education.(Red Box)
- Or Sara who works in IT will have a 1.6% Gender Pay Gap disadvantage if they have a college degree etc. (Blue Box)
- Therefore if we compare Gender Pay **within similar category,** such as education, we will each arrive at different Gender Pay Gaps?

Absolutely! Besides this, different job titles have different pay scales depending on Gender as well.



- You can see that there are a fair mixture of gender pay gaps for each job category
- You lose some you win some….
- So where did that 8.4% Gender Pay Gap come from?

Some high paying jobs are dominated by man…..that's why



- The 2 highest paying jobs
  - Manager
  - Software Engineer

…….are dominated by man (Red Box).

- this scales up the median pay for Males..and further widening the Gender Pay Gap.

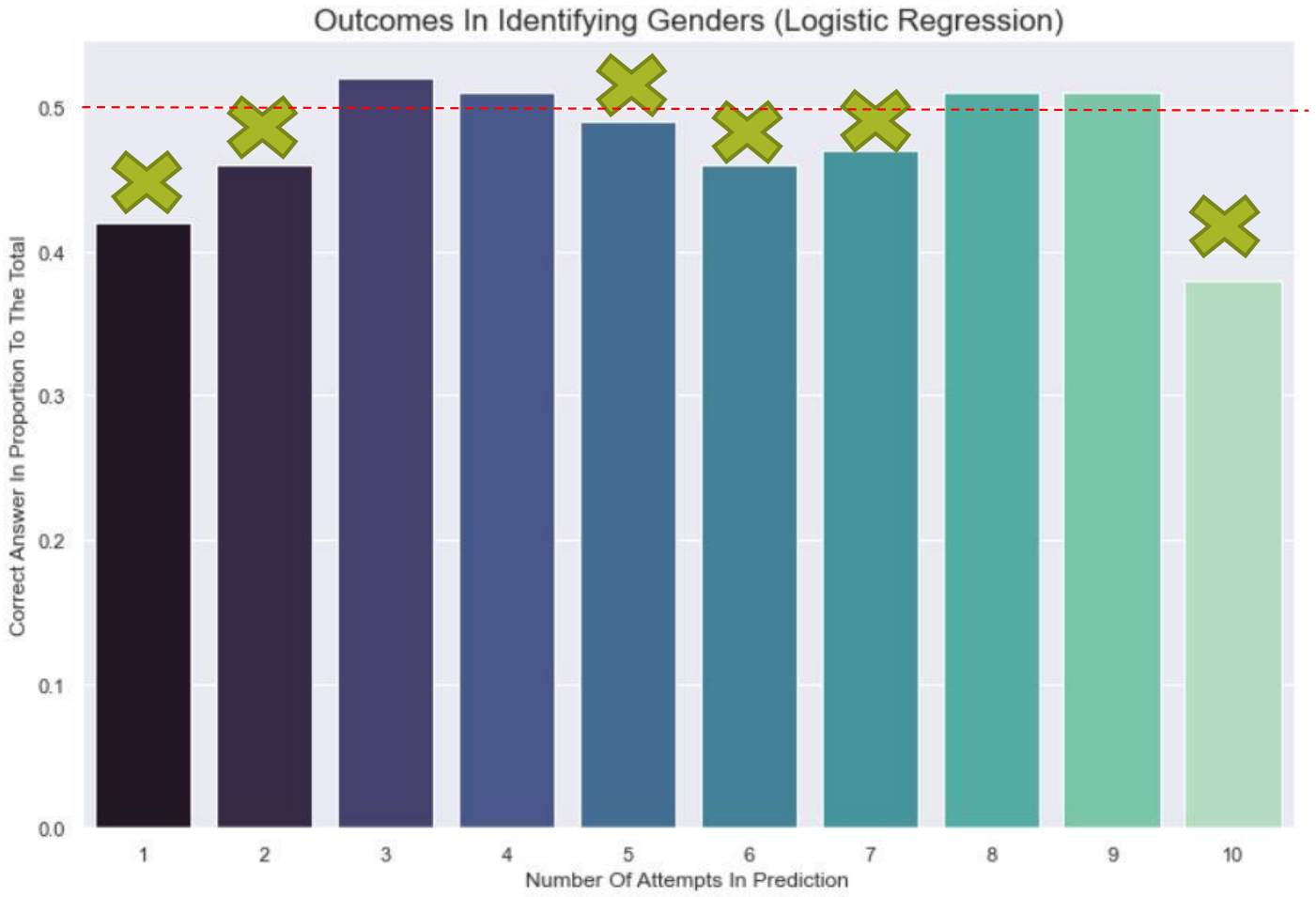
- Therefore we should really look beneath the surface before making a conclusion…correct?

I can see clearer now, so after some adjustments, the Gender Pay Gap should be around….3.4%?
That's correct my dear! So clever…..But just to be sure there is no significant biasness,
let's let AI do the conclusion!

- We shall play a game, we will train the computer to learn about relationships between base pay and gender, and after that try to identify gender. We will also include education, age and job titles.
- If the computer identifies correctly most of the time (> 5 out of 10 correct attempts), you win! Else, I win! Ok?

Alright. Bring it on!
Get set, GO!!!

RESULT : In 6 out of 10 attempts the computer identifies genders incorrectly.



6 incorrect attempts!

Criteria for correct attempts,
Success rates must be > 0.5.

Since there are 6 incorrect attempts to identify the correct genders, we conclude there are insufficient evident to prove that the gender pay gap is significant!

THANK YOU!!!