PROJECT PLAN: Gender Pay Gap (SQL)

OBJECTIVE

My client is a UK government department, concerned with monitoring the gender pay gap across different industries. Using SQL, my task is to explore a data set to understand the following:

- The limitations of the data & how data collection can be improved
- The best metric for a company's pay gap
- The average pay gap across the UK
- Companies with particularly large pay gaps in favor of men or women
- Whether a company's size or sector affects its pay gap

PURPOSE

OVERARCHING QUESTION, HYPOTHESIS OR PROBLEM STATEMENT

1. What is the average pay gap for companies across the UK?
2. Are the differences between average pay gaps across industries?
3. Are the differences between average pay gaps across different regions of the UK?
4. What are some of the companies with the largest pay gaps?

DATA

PRIMARY AND SECONDARY SOURCES TO SUPPORT YOUR ANALYSIS

- Employers with 250 or more employees have published their figures comparing men and women's average pay across the organization
- Sourced from: https://gender-pay-gap.service.gov.uk/
- SicCode info: https://assets.publishing.service.gov.uk/media/5a7f8639e5274a2e87db65e1/SIC07_CH_condensed_list_en.csv/preview

ANALYSIS

SUMMARY OF DATA DRIVEN INSIGHTS

- 10,174 total companies
- 361 companies submitted their data after their reporting deadline
- 3,700 companies did not provide a URL
- Limitations:
    - the columns about bonuses had a lot of missing information
    - The source website tells us that the date is self-reported by all companies
- SicCodes are a list of SIC codes used to describe employer's sector
- Mean % difference between male/female hourly pay: 13.63 – favoring males
- The 10 companies with largest pay gaps skewed towards men:
    - HPI, M.Anderson, PSJ, ATFC, Hull, Service Innovation, Brand Energy, Robinson, The Learning for Life, Greenbrook Healthcare.
    - These companies are not well known/small in size
- Average pay gap in London: 13.63
- Average pay gap outside of London: 11.94
- Average pay gap in Birmingham: 10.76
- Average pay gap in Schools:
    - Via using the employer name in the where clause:
        - 215 employers that are schools
        - their average pay gap is 15.71
    - Via using the address in the where clause:
        - 363 address with schools
        - their average pay gap is 19.68

- Average pay gap in Banks:
  - 69 banks
  - Average pay gap: 26.31
- The largest company sizes have the lowest gender pay gaps (20,000 or more in size = 12.48 average pay gap)
- Less than 250 in company size = 14.06 average pay gap
- Regions:
  - SM11JB, WS28DS, BB55AY: postal codes where average pay gap favored women
  - CM25PW, NE110BL, W1S4HQ: postal codes where average pay gap favored men
- Top 5 Industries:
  - 55100: Hotels and similar accommodation: 100% average pay gap
  - 25110: Manufacture of metal structures and parts of structures: 100%
  - 56101: Licensed restaurants: 100%
  - 41100: Development of building projects: 100%
  - 85200 & 85310: Primary education & General secondary education: 93%

Answers to Purpose Questions:

1. The average pay gap for companies across the UK?
   a. 12.31 – favoring males
2. Are the differences between average pay gaps across industries?
   a. Yes, hotels, metal manufacturing, restaurants, building development, and education favor men at 100% or almost 100%. Where as private security activities (80100), civil engineering construction (42990), and machining (25620) favor women at over 100%.
3. Are the differences between average pay gaps across different regions of the UK?
   a. The postal codes differ where average pay gaps favor men vs. women and vice versa.
4. What are some of the companies with the largest pay gaps?
   a. ATFC Limited, HPI UK Holding, M.Anderson Construction, PSJ Fabrications, Hull Collaboration, Service Innovation Group, etc.