San Francisco Gender Salary Gap

Interactive Visualizations to Explore the Salary Gap within Government Data

Introduction: Our team wished to gain insight into the gender salary gap within a major city within the united states. Through interactive visuals, claims that women are paid less, are verifiable within the government sector. If you wish to explore the application click here.

Statistics and Terminology: For this project we have only created an interactive application. No statistics have been performed as of this time. Future work will include statistical analysis.

Methodology: We obtained a SQLite database of approximately 150,000 entries of salary and demographic information to begin the exploration. An immediate obstacle with the data presented itself. While the data contained a column that was the name of the person, it did not contain a gender column. Using a library in python called "gender guesser" we were able to use the first names of the individuals to guess the gender. After that addition to the data we were able to proceed forward in creating visualizations.

Images:

Fig 1: Screen shot of the home page.

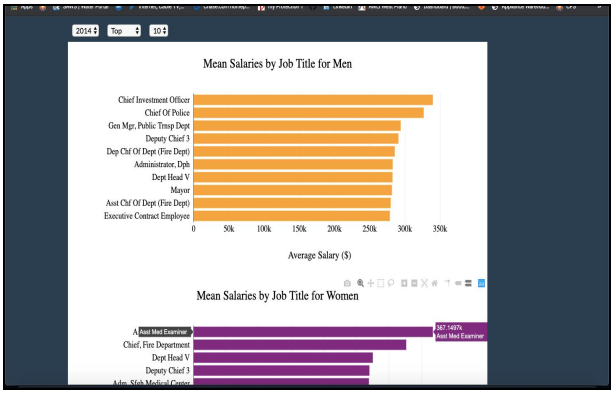

Fig 3: Horizontal bar chart showing salaries of the highest or lowest paying government occupations in San Francisco. Graphs are separated by gender; male graph on the top, and female graph on the bottom.

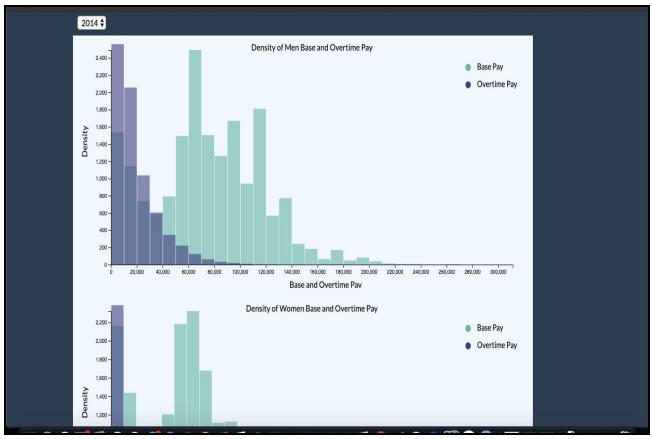

Fig 2: Histogram comparing base salary and overtime salary earned by males in the top graph, and females in the bottom graph.

Fig 4: Bar charts showing average, max, and median total base pay of both males, and females.

Figure 2 Observations: The figure has two histograms, one representing male and the other female. Based on visual observations it appears that in terms of base pay males and females are indistinguishable, but the story changes factoring in overtime pay. Male and female differences in overtime earnings have a pronounced disparity. The reasons for this may be society pressure as women might feel obligated to cap their working day at 5pm to attend to other commitments, such as children. This is just a hypothesis as that question is outside the scope of the project.

Figure 3 Observations: The figure contains two horizontal bar charts, the top one containing male information and the bottom containing female information. The chart is comparing the top or bottom paying jobs for each gender. Immediately, upon filtering to the top jobs, one notices that the top occupations for men earn greater salary than the top occupations for women. The issue with comparing them through this method is that the top earning occupation for each gender is a different title. Future work will include creating a percent difference graph that allows direct comparison of each occupation.

Figure 4 Observations: The last figure is two bar charts that visualize the maximum, median, and average total pay(base salary + overtime pay) of males and females. Once again, the observation that is clear is that through all means of measurement males earn more than females.

Conclusions: Through visualizations we have presented evidence to support the claim that males earn more than females within the government sector of San Francisco. While statistical analysis still needs to be performed the findings in this exploration appear to be substantial enough to support the existence of a gender pay gap.