**Objectives**

During the Covid-19 pandemic, schools, organizations, and non-essential businesses ceased in-person activities, and operations shifted from centralized office buildings to the homes of employees.

While most positions aim to return to the workplace, many businesses have begun implementing permanent telework positions, which will likely become a feature of the US labor market even after the pandemic.

The proportion of these remote jobs will vary by industry, and by the main location of the business. Predicting remote job availability within your industry is useful for those who would prefer to live outside of large job centers, which tend to have high cost of living. This project aims to highlight industries by the fraction of remote positions to total positions, and which US regions are most and least likely to have remote positions available.

Predicting remote job availability within your industry is useful for those who would prefer to live outside of large job centers, which tend to have high cost of living.

**Regionality**

**Explanation**

While many remote positions can be performed anywhere in the country, many positions require occasional visits to the office. Others are only temporarily remote for the duration of the pandemic and will eventually become in-person positions.

The company’s state of origin may be influential in its likelihood to offer remote positions, and it may be relevant to job-seekers who go on site.

**How to use plot**

Hover over the elements of the plot for an informative tooltip, and select elements by clicking to filter the rest of the plots.

**Highlight 1**

When viewed as a region, both the Northeast and Pacific have higher fraction of remote work vs in-person work compared to the southern and midwestern states.

**Highlight2**

The regional difference is amplified when largely physical jobs (e.g., Farming and Fishery) are segregated out. Individual states have even more pronounced differences, with some states having very large percentages of non-physical jobs offered remote (Vermont: 38.7%) compared to others (Nebraska: 6.4%).

**Wages**

**Explanation**

Wages offered for positions in remote vs in-person positions may be different, even within industry and location. This may be due to remote workers being seen as easier to replace, leading to lower offers, or as requiring less overhead and management, leading to higher offers, and this trend varies by industry.

**How to use plot**

**Highlight 1**

On average, remote positions have higher wages than in-person positions. There may be role segregation at play, where more managerial roles are available as remote, and less well-paid roles are only offered as in-person. This can be seen in the mean wage for Primarily physical roles, where the mean in-person wage is 46k, and the mean remote pay is 82k. This can be demonstrated in the outlier plot, where you can see that some technical roles (eg. Airtraffic control) are mixed in.

**Highlight2**

When Technical roles are examined in isolation, remote work on average tends to provide higher wages, followed by temporarily remote and then in-person positions. This may be due to reduced overhead for these employees, or employers treating them as contractors, and thus affording higher wages.

**Ratings**

**Explanation**

Companies that are more concerned with employee welfare may be more likely to offer remote positions, where employee welfare is measured by the star rating left by employees on Indeed’s rating system.

**How to use plot**

**Highlight 1**

Across nearly all occupational categories (19/22), companies that offer remote positions rate higher than those that post in-person positions. Companies with temporarily remote positions tend to have lower ratings than fully remote but are still rated higher than in person only.

**Highlight2**

**Data Sourcing**

Standard occupation categories and sample occupations were taken from the Bureau of Labor and Statistics’ 2018 Standard Occupational Classification System Structure Manual.

[https://www.bls.gov/soc/2018/soc\_2018\_manual.pdf]

Job data were taken from Indeed’s Job Postings.

[https://www.indeed.com/]

**Conclusions**

Remote position availability varies strongly by both location and industry. Both Pacific and Northeast states are more likely to offer remote positions than Southern and Midwestern states, although there is variation within regions.

Jobs which typically require a physical presence, such as Fisheries, unsurprisingly have low rates of remote work available, and Technical industries such as Engineering have the highest rates of remote work. Medical industries, interestingly, have an intermediate amount of remote work, which fits its unique mix on technicality and physical requirements.

Remote positions pay more on average than in-person positions, which may be that companies are incentivizing the lower overhead cost of these employees, or it may be that only more senior or tecnhical roles are available remotely.

Companies that offer remote or temporarily remote positions are correlated to having higher ratings, and by inference are more concerned with employee welfare.

**Methods**

Data collection and analysis was performed in Python 3.6.4 using the included scripts. Data visualization was performed in Tableau.

Standard occupation categories and sample occupations were taken from the Bureau of Labor and Statistics’ 2018 Standard Occupational Classification System Structure Manual. Each occupation category was sampled 4 times to obtain target positions. The targets were lightly processed to increase searchability.

Job posting information from the 3 most populous cities in each state were taken from Indeed.com for each sampled occupation target.

The collected data was aggregated and cleaned, including converting wage information from the format specified in Indeed’s posting to approximate annual wage, and adding state and region information.