Indeed: Clicks, Applies, and Job Opportunity

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Indeed connects users of all backgrounds across the US to jobs that suit their skills, with average daily clicks per posting serving as a direct proxy for interest in a job due the completely linear relationship between clicks and applies. We perform descriptive statistics to determine what industries have the most (and least) potential for employment opportunity using a metric of availability over interest we call "job opportunity rating".

We find that, while the average reviewed over applied ratio (ROA) is roughly .4 across all locations and industries, meaning only about 40% of resumes sent through Indeed are ultimately seen by the company, certain types of jobs exhibit more potential for growth than others due to the difference in available job postings compared to the average clicks per day for jobs in that industry.

Methods and Results

Job opportunity rating is a metric that describes, for each state and industry combination, the percentage of unique job postings for that industry in that state divided by the percentage of average daily clicks for that industry in that state, each relative to the total state values. This provides a normalized estimate of industry availability vs. interest for each state, which we then aggregate by industry and state and normalize on a scale of 1 to 10 to assign a job opportunity rating.

A low job opportunity rating (JOR) indicates that the ratio of applicants to job posts is higher, meaning that more people are in competition applying for the same types of jobs. Instinctively, the jobs with the lowest JOR are common jobs with lower barriers of entry such as customer service, administration, and janitorial/sanitation, which our findings describe as having the lowest rating.

On the other hand, a high JOR indicates that there are many postings for jobs in that industry, but relatively less interest for those jobs, meaning there is more opportunity for a single person applying to them. Jobs in technology and healthcare such as analyst, software engineer, and doctor which require higher education rank at the top of our list, so looks like DataFest participants are in luck! While these types of jobs make up a mere 3.5% of unique job postings in the dataset, our findings indicate that it is these jobs which have the highest potential for employment based on availability compared to interest.

Conclusion

Future employees looking to enter the workforce should focus on jobs in healthcare and technology that are currently undersaturated on Indeed, and consider states like Nevada and Georgia that currently lack employer interest in these industries. Employers looking to expand into high technology jobs should focus on states like North/South Dakota and New Hampshire that display high interest for these industries relative to the amount of opportunities present there. For license or no education requirement jobs, states like Montana and Oregon are worth focusing on due to the unemployment rate relative to number of job postings and applications .

Additional Findings
- **Outside resources:** Bureau of Labor Statistics - The number of unemployed individuals in each state.
- **The purposes:** Mainly for individuals with just license, high school, or below education looking for jobs in their local areas (by states).
- **Intuition:** Jobs that require only licensed jobs, high school education or no education tend to hire locals.
- **Explanation of Colors in Map:**
    (i) The more red (dark red) it becomes, it means the more jobs are available for state residents with just licenses, high school or no education.
    (ii) The more blue (dark blue) it becomes, it means the more active local applicants with just licenses, high school or   no education are applying for jobs in their states.

General
- There is 1 candidate review per ~ 25.5 clicks
- On average, companies review 41% of the applications they receive on a given day, consistent among industry, company size, and state.
- People are more likely to apply for jobs in the first half of the week, with Wednesday having the highest number of applies, and Saturday having the lowest.
- People apply significantly more in the months of December and January in comparison to other months. People apply least in June, with applies being less than 1/3 of those in December. We hypothesize that holiday seasons may affect this result.

Job description length analysis
- There is no correlation between applies/clicks and job description length.
- The average length of job postings in characters is ~1651 characters (or ~250 words)
- The average length by territory ranges from 1514 (NH) to 2180 (DC)
- Larger companies tend to have longer job descriptions
- Direct employer postings more likely to have longer descriptions.

Job posting length analysis
- The average length of job postings is roughly 33 days or 1 month.
- Job length has negative correlation with average applies, clicks, and candidates reviewed. Jobs that are posted for longer tend to get less reviews on average since most applies happen in first week or so.