

## **The Value of Working Conditions in the United States**

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Labor supply decisions are often modeled as a function of wages, and there is widespread interest in understanding wage differentials across different demographics as well as wage inequality more generally. It is also recognized, however, that wages do not reflect the full compensation that individuals receive from working, since jobs vary based on attributes such as schedule flexibility and physical demands. Individuals may “purchase” better job amenities by accepting jobs with lower wages that have their desired characteristics. These tradeoffs between wages and amenities may be systematic and distort the metrics of wage inequality or wage differentials.

It is difficult to isolate the wage-amenity tradeoffs that individuals are willing to make. Equilibrium wages are functions of both individual preferences and firm-level decisions, obscuring individual valuations of their on-the-job amenities. Labor market frictions may also deter individuals from transitioning to their preferred jobs. Moreover, job amenities are not randomly assigned and are potentially correlated with unobserved determinants of wages, suggesting non-causal correlations between wages and job amenities that do not reflect the tradeoffs that individuals actually face. Researchers observe equilibrium outcomes of complicated worker- and firm-level interactions, with little information about the alternative jobs that each worker would reasonably consider.

Despite these difficulties, estimating the valuations on job characteristics is critical for understanding labor supply decisions and cross-sectional and temporal wage variations. Wage differentials across groups are potentially a function of the types of jobs that individuals have selected. In this paper, we study the importance of non-wage attributes in job choice decisions and explore the role of job amenities in explaining the wage structure.

## **Data and Methods**

Using a nationally representative (when weighted) Internet panel known as the *RAND American Life Panel*, we survey 1,818 individuals on their preferences for jobs, which vary based on wages and job amenities. We then present each respondent with a set of job choices and ask them to select their preferred job. We categorize jobs based on 10 attributes: full-time status, schedule flexibility, telecommuting opportunities, physical demands, pace of work, independence, paid time off, working with others, job training opportunities, and impact on society. We also specify weekly hours and monetary compensation.

Given these data, we are able to quantify the wage-amenity tradeoffs that individuals are making and estimate valuations for each job characteristic. The advantage of this approach is the ability to fully control the choice set while permitting the randomization of alternatives. By determining and observing the full choice set, we eliminate concerns that the choice set is endogenous to individual- or market-level factors. We also collect data on the respondents' current job characteristics. This information, along with the estimated valuations, permit us to analyze how wage differentials across gender, race, and age change when differences in job characteristics are also accounted for.

Specifically, we assume that the indirect utility function is linear:

$$V_{ijt} = \alpha + \mathbf{x}'_{ijt}\beta + \delta \ln w_{ijt} + \varepsilon_{ijt},$$

where  $V_{ijt}$  represents indirect utility for individual  $i$ , alternative  $j$ , for choice  $t$ ;  $\mathbf{x}$  is the set of non-wage characteristics; and  $w$  is the wage. We use the log of the wage, because we anchor each person's wage offer to their most recent wage, and there are large cross-sectional wage differences in our data. Assuming that  $\varepsilon_{ijt}$  is an Extreme Value Type I random variable, we estimate the probability that an individual selects a job with characteristics  $\mathbf{x}_{ijt}$  over a job with characteristics  $\mathbf{x}_{ikt}$  using

$$P(V_{ijt} > V_{ikt}) = \frac{\exp[\alpha + \mathbf{x}'_{ijt}\beta + \delta \ln w_{ijt}]}{\exp[\alpha + \mathbf{x}'_{ijt}\beta + \delta \ln w_{ijt}] + \exp[\alpha + \mathbf{x}'_{ikt}\beta + \delta \ln w_{ikt}]}$$

We define our willingness-to-pay measure for amenity  $r$  by the equation:

$$\delta \ln w = \beta^r + \delta \ln[w - WTP^r].$$

The individual is indifferent between not having the amenity and having the amenity with a corresponding wage decrease equal to  $WTP^r$ . Solving for the willingness-to-pay measure:

$$WTP^r = w \left[ 1 - e^{\left(-\frac{\beta^r}{\delta}\right)} \right].$$

This is the measure we report when discussing our results below. For interpretation, gaining amenity  $r$  is equivalent to a  $100 \left( 1 - e^{\left( \frac{-\beta r}{\delta} \right)} \right)$  % wage increase.

## **Findings and Discussion**

We find systematic differences in job characteristics across groups. For example, 18.8 percent of men report working in a job that requires intense physical activity, compared to 11.6 percent of women. On the other hand, 63.2 percent of men report that they have some control over their work schedule, while only 57.8 percent of women do. We study both the importance of these types of differences in current job characteristics as well as differences in valuations across groups.

We find that these characteristics have substantial explanatory power in explaining job choices. We estimate that a switch from a physically demanding job to a job requiring only moderate physical activity is equivalent to a 20-percent wage increase, while schedule flexibility is similar to a 9-percent wage increase. Paid time off is also highly valued. We estimate statistically significant effects on all dimensions, ranging between 4 percent and 24 percent of the wage. In total, we find that a switch from the worst job, in terms of on-the-job amenities, to the best job is equivalent to a 64-percent wage increase. This metric is robust to functional form assumptions.

Using our estimates, we study whether amenities reduce or exacerbate existing wage differentials. When focusing only on the different incidences of amenities across groups, we find that variation in amenities does not alter differentials based on gender, race, or age. However, the differential between those with a college degree and those without increases when amenity variation is taken into account. When we permit valuations to also vary across groups, we find that amenities play an important role in compensation differences. Our valuations vary substantially by group. For example, we estimate that a job requiring “heavy physical activity” is equivalent to a 17.7-percent wage decrease when compared to a job that involves mostly sitting. However, there is substantial variation across age groups. For ages 25-49, this characteristic is equivalent to a 12.1-percent wage decrease, while respondents ages 62 and older value it as corresponding to a 24.1-percent wage decrease.

When accounting for these differences in valuations, we find that the differentials across groups are meaningfully affected. The gender gap actually decreases when permitting valuations to vary by gender. In our data, we observe a 20-percent wage gap between men and women. When amenities are factored in, this gap shrinks to 9 percent. However, the wage differentials increase when defined by race, education, and age. For example, whites earn 9 percent higher wages than non-whites. When amenities are included, this differential increases to 22 percent. College-educated individuals earn 49 percent higher wages, but this differential increases to 70 percent when amenities are accounted for. Finally, individuals ages 50 and over earn (a statistically insignificant) 5 percent more than their prime-age counterparts (ages 35-49). When amenities are included, the differential increases to (a statistically significant) 12 percent.