Pre-Analysis Plan: Worker Sorting and Gender-Inclusive Language in Job Ads

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Abstract

We describe a survey-based discrete choice experiment in which respondents are asked to choose between job ads with exogenously varying attributes, following a similar setup as Maestas et al. (2023) and Nagler et al. (2023). The aim of this experiment is to estimate willingness to pay for a range of non-monetary attributes including workers' preference for non-binary gender-inclusive language (NB-GIL). We also elicit respondents' political beliefs, labour market and demographic characteristics. In this pre-analysis plan, we describe the experimental setup, our estimation of willingness to pay for job attributes, and how workers' preferences interact with their political opinions and characteristics.

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1 Description of the study

We collect data in an online survey-based discrete choice experiment in which respondents are asked to choose between job ads with exogenously varying attributes, following a similar setup as Maestas et al. (2023) and Nagler et al. (2023).

We study:

1. whether job-seekers have any preferences over non-binary gender-inclusive language (NB-GIL) in vacancy postings
2. if yes, what is the willingness to pay to work for an employer that includes NB-GIL in their job ads
3. which worker or job characteristics drive these preferences

NB-GIL is not a standard job attribute (such as job flexibility or remote work that have been studied in the literature) but primarily a signal about the firm. As a result, we don't ask about it directly in the experimental part of our survey, and include randomization whenever respondents come into contact with NB-GIL in our survey instructions.

We incentivize the survey by providing the respondents with non-public information from an online job board (Indeed.com) about wages and job attributes of recent vacancies based on their answers in the survey. We inform respondents about this reward at the start of the survey, which provides additional incentives to fill the survey accurately.

Dependent and independent variables We collect the following outcome and explanatory variables:

1. Individual preferences over characteristics of job vacancies, measured from stated preferences in our discrete choice experiment.
   (a) wage (drawn from a uniform distribution from -20% to +30% compared to average wages in this occupation based on real wage data from the online job board Indeed Germany)
   (b) NB-GIL language (binary)
   (c) number of vacation days (24, 26, 28, 30, 32)
   (d) flexible working (binary)
   (e) subsidized lunch (binary)
   (f) free public transport ticket (Deutschlandticket) (binary)

2. Individual perceptions of employers offering NB-GIL, measured as share of respondents who believe an employer that uses NB-GIL in a job ad:

   (a) is young and dynamic

   (b) offers better perks and benefits

   (c) provides a more international work environment

   (d) has more women and minorities in leadership roles

   (e) hires workers regardless of their political opinions and beliefs

   (f) is less focused on profits

   (g) offers meaningful work

3. We also ask respondents about their perceived chances to get a job offer by such a firm.

4. Individual opinions on a range of political issues, measured as share of respondents who agree with the following statements:

   (a) In Germany, you can no longer express your opinion freely.

   (b) Refugees only come to Germany to take advantage of our welfare state.

   (c) Women still face discrimination in the labor market and in the society.

   (d) Law enforcement is too lax when it comes to prosecuting climate protesters, such as "Last Generation".

   (e) The elderly generation lives at the expense of the young.

   (f) It's important to use gender-inclusive language.

5. Individual perception of their political views, measured as a number on 0-100 scale for left- vs right-leaning.

6. Voting intentions for the next election, measured as share of respondents choosing one of 7 leading German political parties

Randomization The discrete choice experiment presents the respondent 7-8 pairs of hypothetical job vacancies and asks the respondent to choose which one they prefer more from each pair. The presented vacancies randomly vary any of the 6 dimensions listed in our description of the job ad above (all positions are indicated to be full-time). In particular, the random variation in wage allows us to estimate the willingness to pay (WTP) for these

amenities listed in job ads. The job title and wage of the vacancies presented to each individual depend on their occupation and preferred job title, which the respondent chooses at the start of the survey.

In addition, we assign the respondents to 6 orthogonal treatment arms:

1. information about the content of vacancy postings: we show all respondents two postings to demonstrate what to expect in the experiment
   (a) Vacancy with NB-GIL language shown first, then vacancy without NB-GIL language
   (b) Vacancy without NB-GIL language shown first, then vacancy with NB-GIL language
2. Questions about perceptions about employers offering NB-GIL: respondents are asked to give their opinion about a hypothetical employer based on a shown vacancy posting
   (a) Vacancy with NB-GIL and all amenities (lunch, Deutschlandticket, flexible work)
   (b) Vacancy without NB-GIL and all amenities (lunch, Deutschlandticket, flexible work)
   (c) Vacancy with NB-GIL and no amenities
   (d) Vacancy without NB-GIL and no amenities

Sample We aim to recruit a total of 6000 respondents. This number is based on comparison with similar discrete choice experiments (Maestas et al., 2023; Nagler et al. 2023) to ensure sufficient representativeness of the population of job-seekers, and to ensure a sufficiently large sample to conduct our heterogeneity analysis, for instance but not limited to, between men and women, younger and older workers, and left- and right-leaning individuals.

We collected data from a small pilot ($N = 182$) with the survey company Bilendi. We will pool this data with that from the pre-registered survey if the design survey doesn't change substantially. We will separately present results from the pooled and pre-registered-only data.

Conditional on consenting to participate, respondents will complete an initial survey that allows us to screen out individuals who are not unemployed or in employment, and who are younger than 18 or older than 65 years. Our survey is only sent to individuals within Germany with good German-language proficiency. We ask the respondents how they search for jobs to be able to match the results of our experiment to observational data on revealed preference for NB-GIL from an online job board.

Our survey includes two attention checks, and we plan to analyze the data separately for those who pass only one (or none) of the attention checks. We also plan to handle outliers by winsorizing our survey data based on WTP estimates, dropping pairwise comparisons where one job strictly dominates the other, and excluding "speeders" from our analyses who complete the survey remarkably quickly.

2 The analysis

We estimate a conditional logit model to analyze respondents' preferences over NB-GIL and other vacancy characteristics:

$$Y_{ipv} = \frac{exp(\beta_j X_i pv + \gamma W_i pv)}{exp(\beta_j X_i pv + \gamma W_i pv) + exp(\beta_j X_i pv' + \gamma W_i pv')} \tag{1}$$

We regress Y_{ipv}, a binary indicator for individual i in pairwise comparison p choosing vacancy v, on a vector of non-wage job characteristics X_{ipv}, $X_{ipv'}$ of the offered vacancies v and v' and their wages W_{ipv}, $W_{ipv'}$. The WTP for NB-GIL language is calculated from the ratio of β_j and γ, i.e. the relative preference for NB-GIL language and for wages.

To understand how NB-GIL affects respondents' perception of the employer, we test whether employer perceptions vary across the 4 treatment arms 2 (a) - (d) described above. We regress individual perceptions on dummies of whether the job ad shown in a given treatment arm contained NB-GIL and various amenities A. We use fixed effects (η_t) to control for the different treatment arms:

$$Perception_{it} = \alpha + \beta NBGIL_{it} + \gamma A_{it} + \eta_t + \epsilon_{it} \tag{2}$$

We plan to conduct heterogeneity tests across occupations, worker demographics, and job characteristics, as well as sensitivity tests across treatment arms. For our heterogeneity analysis, we regress the individual-specific estimate of WTP for NB-GIL language against individual respondents' political opinions and other characteristics X.

$$WTP_i = \alpha + \beta X_i + \epsilon_i \tag{3}$$