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Abstract

Understanding jobseeker preferences, including their reservation wages and how much they value different non-wage amenities, is difficult because these parameters are not directly observable. We run an experiment at a job matching center in which we test four different methods for estimating these parameters. We find large and important differences between the methods, with the method most commonly used in household and labor force surveys - open ended questions - performing worst, and a short set of discrete choices performing best. We then use the data to estimate job seekers' valuations of different job attributes and explore how valuations differ by job seeker characteristics such as gender, education and duration of unemployment. Among other findings, we show that in our sample of jobseekers in Egypt, women are more sensitive to long commutes and value flexible schedules more than men. These finds have important implications for researchers who use and collect data on reservation wages and for policymakers and employers who aim to decrease matching frictions.

Keywords: Job attributes, reservation wages, discrete choice experiment.
JEL Classifications: J31, J33.

1 Introduction

How do jobseekers choose which jobs to take? Classic models of job search suggest that they compare the wage offered by a job with their reservation wage and accept it if it's sufficiently high.[1] But reservation wages are not observable, making analysis of jobseeker behavior difficult. Reservation wages are also multidimensional- the non-monetary aspects of a job factor heavily into jobseeker decisions further complicating analysis (e.g. Wiswall and Zafar (2017) Mas and Pallais (2017)). Yet understanding how employment decisions are made by jobseekers is essential for policymakers, academics and employers.

Empirical efforts to measure reservation wages and value job attributes often use indirect methods (revealed preferences) (e.g. Rosen, 1986; Stern, 2004; Lavetti and Schmutte, 2018) which require strong assumptions, or one of a number of direct methods (stated preferences) (e.g. Eriksson and Kristensen, 2014; Wiswall and Zafar, 2017). Direct questions usually focus primarily on the monetary reservation wage, by using questions that ask people to report what they believe their reservation wage is (e.g. Krueger and Mueller, 2016 Caliendo, Lee, and Mahlstedt, 2017). But many jobseekers struggle with precisely articulating their own reservation wages. For example, we suggest that the reader attempt to think about their answer to one of the most common question used to measure reservation wages: "what is the minimum salary you would be willing to accept for a job?".

This paper works towards answering two main questions. First, what is the best way to directly measure reservation wages and value job amenities? Second, how do these parameters differ based on jobseeker characteristics? We seek to know what jobseekers want, as well how different types of jobseekers value amenities differently. Answering these questions is essential for informing standard models of the labor market (e.g. Pissarides, 2000; Shimer and Werning, 2007; Burdett and Mortensen, 1998), and essential for calibrating optimal unemployment insurance and payroll taxes policies (Neumark and Wascher (2011)). Policymakers can use individual willingness to pay estimates to determine whether employer mandates can be a socially efficient way to expand access to certain benefits (Kolstad & Kowalski, 2016). Finally, profit-maximizing employers also benefit from knowing how much value employees place on different job attributes. With this knowledge

[1] More recent and complex models with multiple offers (e.g. Galenianos and Kircher (2009)) allow job seekers to turn down jobs with wages higher than their reservation wage if another job offers them an even higher pay.

employers can craft optimal compensation bundles that maximize employee value and minimize employer cost. For example, if employees value having a well stocked kitchen at work more than the opportunity cost to the employer then it could be a good way to attract and retain talent, as is seen in many companies recently (Oyer and Schaefer, 2005 Oyer, 2008).

To answer these questions we implemented a randomized experiment in a job matching center. As job seekers signed up for matching support they were asked to fill out a form that randomized the method used to collected their reservation wage. We consider 4 different strategies: (1) Open Ended questions, (2) Pay-Card Questions, (3) Double Bound Dichotomous Choice Questions, and (4) Discrete Choice Experiments.

Open ended questions simply ask individuals to report the minimum value they would accept for a given job. "Pay-Card" questions provide multiple choices that people can pick from. "Double Bound" questions ask two binary questions - would you accept this job if it paid "X", and then bounds their valuation by asking a second question: "would you accept this job if it paid "X+Y" if they said no, or "X-Y" if they said yes. Discrete choice experiments provide two job offers and ask the individual to choose one of the jobs, or to refuse both jobs. It does this many times- in our experiment individuals were presented 15 pairwise comparisons.

We find that valuations are sensitive to the method used to measure them. Open ended questions, which is one of the most common methods used in the literature, performs particularly bad, with estimates that have high variance and coefficients that can go against basic economic theory. For example our estimates using this method, if taken at face value, imply that employers would need to pay their employees *more* if the employers provide free meals on the job. This contrasts sharply with estimates from the discrete choice experiments which value free meals in line with what the value of those meals cost in this context.

Estimated reservation wages, conditional on job attribute bundle, also vary widely. Job seekers in our sample were primarily interested in blue-collar jobs in Cairo, Egypt. We found that their reservation wages ranged from a low of 1,861 Egyptian Pounds (EGP) a month using DCE (minimum wage in Egypt is 1,200 EGP/month, 1USD$\simeq$16EGP) to 2,711EGP/month using open ended questions, a 44% increase. The pay card method estimates a monthly reservation wage of 2,238EGP and the double bound estimates it to be 2,045. All 4 of these estimates are economically and statistically significantly different from each other.

The data from the DCE provide the estimates that are consistent with economic theory and the economic literature, while each other method has at least one seemingly inconsistent estimate. While we already mentioned how estimates from open ended questions imply that free meals have *negative* value, that method also finds that free daycare is also a disamenity. The pay card method finds that commuting 90 minutes would require higher compensation than commuting 120 minutes to work. The double-bound method also finds that free daycare at work has *negative* value and shows no difference in commuting 60 minutes vs. 120 minutes to work. The DCE method, on the other hand, provides estimates that are all in line with basic theory, while only taking 40 seconds longer to implement on average.

We then utilize the data from the discrete choice experiment to describe how valuation of job attributes differ by individual characteristics. We find that men and women value job attributes differently. Women are much more sensitive to long commutes, requiring compensating differentials that are twice as large as men for commuting 60 minutes to work relative to a baseline commute of 30 minutes. Men value health insurance more than women, while women value daycare options at work more than men. When we split this further by marital status and we find that daycare options at work are highly valued by married women but not by any other group.

We also find differences by education. Highly educated workers are more sensitive to longer commutes as well as to the need to work on weekends, requiring higher compensation to accept jobs with these attributes. We find that those who have been unemployed for at least 12 months whose value of health insurance much less than those who are newly unemployed.

These results have important implications for academics, policymakers and firms. Many models include reservation wages as an important parameter and we have shown that that parameter is sensitive to the method used to collect it. Policymakers are often concerned with what can be done to provide a more inclusive and equitable workplace. This is especially true in countries where female labor force participation rates are low. We show that issues like commute time, daycare and not working weekends are relatively more important for women when they consider job opportunities. Firms can also benefit from utilizing these methods to learn what their current and potential employees value so that they can craft a bundle of amenities that are most attractive conditional on their budgets.

This paper makes three main contributions to the scientific literature. First, we contribute to the

literature that studies how individuals set their reservation wages (e.g. Caliendo, Tatsiramos, and Uhlendorff, 2013; Krueger and Mueller, 2016; DellaVigna, Lindner, Reizer, and Schmieder, 2017). Due to a lack of data, these studies often use responses to "open ended" questions, or revealed preference measures that need to make strong assumptions about outside options. We show that open ended questions produce results that are inconsistent with basic economic theory, whereas discrete choice experiments (which labor economists have started to utilize more recently) perform best while taking less than a minute longer to administer.

Second, we contribute to the literature that attempts to value different work amenities. Previous work has looked at the value of schedule and location flexibility (e.g. Wiswall and Zafar, 2017; Mas and Pallais, 2017; He, Neumark, and Weng, forthcoming), as well as as certain types of fringe benefits (Eriksson and Kristensen, 2014; Maestas, Mullen, Powell, Von Wachter, and Wenger, 2018). We contribute to this literature by including additional amenities like free daycare and considering the importance of commute time. We estimate how these valuations differ by gender, marital status, education, and length of job search spell. Moreover, while the vast majority of studies focus on how individuals from developed countries value job amenities, there is less research focused on developing countries[2]. Showcasing that preferences for job amenities can differ by local context is important for understanding why labor markets may reach different equilibria in different places with respect to issues like female labor force participation and gender wage gaps.

Third, by comparing estimates resulting from several different elicitation methods our paper makes a contribution to improving measurement in labor economics and to the field of survey design (Tourangeau, Rips, and Rasinski, 2000), in particular regarding the valuation of amenities using stated preference methods (Bateman et al., 2002). The amenities over which we find differences in willingness to pay across elicitation methods are both market and non-market goods that are part of a purely private good such as a job vacancy. This contrasts with previous studies that focus on non-market or public goods (e.g. Brown, Champ, Bishop, and McCollum, 1996; Welsh and Poe, 1998; Cameron, Poe, Ethier, and Schulze, 2002). The fact that some of the amenities we include can be purchased in the market should reduce the likelihood that different elicitation methods would yield different willingness to pay estimates for these attributes. Despite this, we

[2]A notable exception is He et al., forthcoming, who study preferences for flexible jobs among white collar workers in China.

still find large differences across elicitation methods suggesting that results obtained from certain stated preference methods should be taken with caution.

The rest of the paper proceeds as follows: section 2 describes the experimental design including details on each elicitation format we use. It also outlines the empirical strategy we use to estimate reservation wages and the values of amenities. In section 3 we present our main results, comparing the estimates obtained with each elicitation method and discussing their strengths and weaknesses. Then, in section 4 we explore the heterogeneity in attribute valuation by background characteristics including gender, marital status, level of education and time spent looking for a job. We move to discussing the implications of these results for academic and policy makers in section 5, while also outlining the study's limitations. Finally, section 6 concludes and discusses directions for future research.

2 Data and Elicitation Methods

We collected data about job seekers' reservation wages and valuation for non-wage job attributes in collaboration with the National Employment Pact (NEP), an NGO based in Cairo that provides job matching services through their partnership with over 700 employers in Egypt. Approximately 95% of the employment opportunities that NEP offers are for blue-collar jobs. They also require firms to provide social and medical insurance and to pay above the minimum wage.

NEP advertises their (free) services widely and job seekers can simply walk into one of their job matching centers to apply for support. Job seekers register with the NGO and sit with an employment officer who learns more about the candidate. Afterwards they are encouraged to fill out a supplemental survey we designed so that NEP could learn more about their job preferences. The survey included a few questions for the job seeker about their job search activities, and a series of hypothetical questions that would allow us to infer the value they place on five different characteristics of a job: travel time to the workplace, health insurance, whether the job requires to work some weekends each month, and whether the job provides with meals and/or daycare on-site. We chose these characteristics based on the type of employment opportunities that NEP usually offers to job seekers (such as health insurance) and based on suggestions from NEP's staff about what amenities they thought job seekers would care about. In appendix A we show the values

that each of these attributes could take. We fielded our survey between August 2018 and March 2019. During this time 1,996 job seekers filled out our survey, about 60% of all the individuals who registered for help at NEP.

Panel A of Table 1 shows summary statistics for our sample. These job seekers are relatively young, predominantly male and single. The average job seeker has completed high school and has been looking for a job for 8 months by the time s/he registers with NEP. Job seekers spend approximately 15 hours a week looking for a job, although search intensity is quite low: almost 50% of the individuals surveyed use only one method to look for a job, and two thirds of job seekers used at most two methods to look for a job. This stylized fact is in line with recent studies that find that job seekers face high job search costs (Abebe, Caria, and Ortiz-Ospina, 2019).

We compare our sample to a a representative sample of all unemployed people in Egypt using the 2017 Harmonized Labor Force Survey (HLFS, OAMDI, 2019). Our sample is only slightly older, while marriage rates are similar across samples, as are years of education. Our survey respondents have been looking for a job for a shorter period of time than unemployed individuals in the HLFS. We explore heterogeneity in responses by subgroup in section 4 below.

We also contrast our sample with those that registered at NEP but chose not to do our survey supplement. In Panel C of Table 1 we present the demographic characteristics of job seekers who registered with NEP during our data collection period. From this data we can conclude that our sample of respondents is younger, more likely to be male and single (hence having fewer dependents), and more educated than the group of job seekers who signed up with NEP.

2.1 Elicitation Methods and Estimation Strategies

To assess the sensitivity of reservation wages to the elicitation method used, we randomized respondents into three different groups, which correspond to three different elicitation methods: open ended questions, pay card questions, and double-bound dichotomous choice questions. Each format contained seven questions meant to recover the value associated with the same job attributes across elicitation methods. Appendix B shows the questions asked to each participant. We also implemented a discrete choice experiment that was included in all surveys. In this section, we describe in detail each method used, including their strengths and drawbacks, and the method we use in each case to estimate the willingness to pay for each of the included attributes.

2.1.1 Open-ended Questions

Open-ended questions are the most common type of elicitation method used in labor force surveys (see for example Faberman, Mueller, Şahin, and Topa, 2017, Krueger and Mueller, 2016 and Hall and Mueller, 2018). They amount to directly asking an individual what is the minimum wage required for her/him to take a job. The answer is typically considered to be the reservation wage of the person.

Contrary to most surveys which only ask one open-ended question without giving any detail about the job in question, in our survey, individuals assigned to this type of elicitation method were faced with seven hypothetical job offers, all of which described how far away they were from the individual's home (in minutes), whether it included healthcare for the respondent and their spouse, whether it required the person to work certain weekend days, and whether meals and daycare were included benefits of the job. In each case, after the job was described, we asked the person to state the minimum salary for which s/he would take the offer. Figure 1 provides an example of the type of questions respondents faced.

The main benefit of this method is that it avoids any bias that may stem from showing the individual one or more values they can pick from. Moreover, because each response is a single value rather than an interval, it is straightforward to estimate the value placed on each of the job attributes. These can be obtained using a hedonic regression of the reported wages on the different attributes.

The following equation presents the regression model we estimate:

$$W = \sum_{k \in \{60,90,120\}} \beta_k \times Commute_k + \sum_{d \in \{S,SP\}} \lambda_d \times Hins_d + \gamma Weekend + \mu Meals + \theta Daycare + \varepsilon$$

Where W is the wage stated by the respondent and each covariate represents a dummy for whether the attribute was provided by the job in the hypothetical question they were asked. There were four different levels of commutes (30, 60, 90 and 120 minutes from home), and three different levels of health insurance (no insurance, only for self, for self and spouse).

The main drawback of this elicitation method is that because individuals are allowed to input any value, estimates will be sensitive to the presence of outliers. These questions also do not reflect

a situation that job seekers typically encounter when receiving a job offer, so even though the questions may seem simple respondents may have difficulty in coming up with reasonable answers. As evidence of these issues, 98% of the answers are multiples of 100 despite individuals being able to give any integer amount as an answer and 40% of all answers are above the highest value specified in the multiple choice methods used, which included wages well above what are actually available in the labor market at the time.

2.1.2 Payment Card

Instead of allowing individuals to choose any wage as the minimum they would be willing to accept, the payment card method (Mitchell and Carson, 1981) presents a series of values for respondents to choose from. Individuals are expected to pick the lowest value that is higher than their true reservation wage (e.g. if the card shows values from EGP 1000 to EGP 2000 in intervals of 200, and a person's reservation wage for the described job offer is 1500, she should choose EGP 1600 as her answer). Figure 2 provides an example of the questions asked in the survey.

Because responses only give us a bound within which the actual reservation wage for each hypothetical job lies, we use an interval data model that we estimate via maximum likelihood (Cameron and Trivedi, 2005). In this case, besides the covariates for each job characteristic we include a dummy for the range of values in the payment card that individuals observe.

By bounding the possible choices of the respondent, the payment card format is not affected by outliers. However, there is evidence that responses can suffer from anchoring bias: the response given by an individual may be affected by the range of values shown, even if her reservation wage is contained in all the ranges shown (Rowe, Schulze, and Breffle, 1996). We explore this further through auxiliary experiments outlined in section 2.1.5 below.

2.1.3 Double-bound Dichotomous Choice

The dichotomous choice method (also known as the "referendum method") has been one of the most popular contingent valuation methods used by researchers to value non-market goods (see for example Hanemann, Loomis, and Kanninen, 1991 and Carson et al., 2003). This method presents individuals with a hypothetical job offer that describes all the characteristics previously mentioned (commute time, health insurance, on-site meals and daycare, and flexible shifts), and then asks

whether the respondent would take the job for a given salary. We randomized the starting salary at the respondent level to be between EGP 1000 and EGP 2400 in EGP 200 increments to minimize starting point bias. Figure 3 shows an example of a question under this elicitation format.

In its most basic form, this is simply a series of take-it-or-leave-it offers (one for each job described), similar to what job seekers usually face in the labor market. However, these questions convey little information: a "yes" only means that the respondent's reservation wage for the job is between 0 and the proposed amount, and a "no" that the reservation wage is bounded between that amount and infinity. For this reason, we adopted a double-bound version of this method, which consists of asking an additional question for each hypothetical job offer: if the respondent accepted (rejected) the first offer, the second question lowers (raises) the salary offered. While in most studies the price of the follow-up offer is a fixed fraction of the first offer, we randomized the amount of the follow-up offer to be between EGP 150 and EGP 500 to further test sensitivity of the responses to the available options (which we discuss further in Section 2.1.5 below).

If the individual answers "Yes" to the first question, and "No" to the second, we know that their reservation wage for the proposed job lies between the second and the first values shown. Similarly, if the answers are "No" and "Yes" respectively, the person's reservation wage would lie between the first and second bids. If the individual replies "No" to both questions, we can bound their reservation wage from below by the second amount offered, while if she answered "Yes" to both questions, we can bound her reservation wage between 0 and the second offered wage.

Similar to the payment card method, the results of the double-bound dichotomous choice procedure are limits on the value that the respondent assigns to each job offer, although in this case the intervals are not fixed since the initial and follow-up wages were chosen at random. We therefore also estimate the parameters of the model via maximum likelihood.

2.1.4 Discrete Choice Experiment

Discrete choice experiments (DCE) have been widely used in transportation and health economics (Greene and Hensher, 2003, Adamowicz, Louviere, and Williams, 1994), and in recent years labor economists began using them as an alternative to revealed preference methods employed to estimate compensating wage differentials (Mas and Pallais, 2017; Wiswall and Zafar, 2017). Their main advantage is that they resemble how individuals maximize their utility in their everyday life, and

how valuation of the attributes of interest would be carried out in a revealed preference framework. Many attributes can be varied at a time while keeping the task tractable for respondents.

In our choice experiment, individuals were first randomized into one of 10 blocks of 15 choice sets. These choice sets contain two job offers each, which vary in one or more of the five characteristics mentioned before as well as their salary.[3] For each choice set, individuals are asked to pick their most preferred alternative, or no offer at all if they would reject both job offers. An example is presented in Figure 4.

We use these choices to estimate the respondents' willingness to pay for each attribute using a mixed logit model (Revelt and Train, 1998, McFadden and Train, 2000). The use of this specification is possible since we observe multiple choices made by each respondent, which allows the parameters of interest to vary randomly across respondents. This permits us to obtain estimates of the parameters of interest for each individual as well as means for the entire sample. Moreover, the model does not require one to assume independence of irrelevant alternatives (IIA), which is unlikely to hold in a setting like this where jobs can vary in many dimensions.

2.1.5 Testing for Consistency *within* Elicitation Method

In addition to comparing different elicitation methods to each other we cross randomized within elicitation methods as an additional test of the sensitivity of estimates to elicitation parameters. We implemented three associated auxiliary experiments. While our main experiment allows us to compare the sensitivity of responses *across* elicitation methods, these experiments allow us to assess the sensitivity of responses *within* elicitation method.

First, in the open ended, pay-card and double-bound methods a random half of participants had their first question describe a job that included health insurance, while the other half had their first question describe a job that did not include health insurance.

Second, for the payment card method we also randomized the range of values shown to people. Some respondents were given one of two lists of responses, the first varied from 1000 to EGP 2200 and the other ranged from EGP 1400 to EGP 2600, in both cases with EGP 200 increments.

[3]Because our fictitious jobs contain six attributes with between two and four values each, there are 384 possible jobs. A full factorial design would give over 70,000 job combinations for job seekers to choose from. Instead, we used the JMP Statistical Discovery package from SAS to create a fractional factorial design with the properties of orthogonality and level balance, which enables us to estimate the main effects parsimoniously.

Third, in the double-bound dichotomous choice individuals are asked if they would accept a job at a given wage ("X") and then asked a follow up question that add or subtracts a second value to bound their valuation ("X +/- Y"). We randomized individuals into 5 different values of "Y", to test the sensitivity of responses to interval size.

We control for these auxiliary experiments in our main experiment specifications and describe their impacts in section XXX below.

3 Comparing Estimation Methods

3.1 Reservation Wages

We begin by comparing estimated reservation wages for the most basic job that participants are presented with. This job requires a 30 minute commute, does not provide health insurance, does not require working on the weekend, nor does it provide free meals or daycare at the workplace. Table 2 reports our estimates from each of the four methods used to elicit reservation wages. Column 1 reports that the open ended questions lead to a reservation wage of 2711EGP a month, with a standard error of 158. As discussed above, the open ended format is particularly susceptible to outliers (Carson and Hanemann, 2005) and so in Column 2 we repeat the analysis but we winsorize the values at the top 1%. This brings down the estimate to 2515 but greatly reduces the standard error to 38.

Columns 3 & 4 include the estimates from the pay card method (2238, s.e.=20) and the double bound dichotomous choice method (2045 s.e.=30). Column 5 includes the estimate from the discrete choice experiment. To make the precision of the estimates comparable we limit the sample to a random third of the participants (we had the whole sample take the DCE but only one third of the sample take one of the other three methods). We estimate that reservation wages using the DCE method are 1861 with a standard error of 44.

Panel B reports the p-values for each pair-wise comparison of the average reservation wage estimated using each of the four methods tested in our experiment[4]. It shows that each of the estimated reservation wages are statistically different from each other with all p-values¡0.01.

[4]We use the unchanged version of the open-ended questions but the results are the same when we use the winsorized version.

The results in Table 2 showcase that there are large economically and statistically significant differences in reservation wages depending on the method used to estimate them. This suggests that researchers should carefully consider how the method used to collect reservation wage data could impact their results and analysis.

But which of these methods provide the estimates closest to the truth? The next section combines estimates from valuing job attributes and simple insights from economic theory to make the case that discrete choice experiments are the best method of estimating reservation wages.

3.2 Valuing Job Amenities

We estimate the value that jobseekers place on different job amenities in Table 3. Column 1 presents the estimates from the open ended questions. This method estimates that individuals would need to paid approximately 153EGP per month to accept a job that is a 60 minute commute from home, relative to one that is a 30 minute commute from home. This increases to an additional 304EGP a month for a job that is 120 minutes from home. We find that individuals would be willing to accept a job that pays 301EGP less if that job also offers health insurance, while needing an additional 320EGP to work on Friday, the first day of the weekend in Egypt. Estimates on the value of meals and daycare are smaller and statistically insignificant.

Overall the estimates from the open ended questions are not very precisely estimated due to their susceptibility to outliers. In Column 2 we we present estimates after winsorizing values at the top 1%. Doing so decreases our standard errors by at least a factor of 2 and up to a factor of 4. This leads to results that are more logically consistent: the cost of longer commutes goes up, and the value of health insurance for two people is now larger than for one (both things that didn't hold without winsorizing). On the other hand we find that free meals and child care are valued as *disamenities*[5].

Column 3 reports the estimates when using the payment card method. These estimates are much more precisely estimated, but this is primarily due to the restrictive nature of the allowable responses. By limiting answers to a small set of choices, this method minimizes outliers and removes some of the natural variation that comes from continuous variables. While smaller standard errors

[5]In Appendix Table C1 we present the results of winsorizing responses at the 2% and 5% levels as well, showing that estimates are robust to these changes.

are often attractive, in this case there are several instances where estimates that are not logically consistent. For example, commuting 90 minutes requires a larger compensating differential than commuting 120 minutes and the value of health insurance for 1 person is larger than for 2 people. These estimates are not only at odds with the theory of compensating differentials, but also with recent empirical findings (Le Barbanchon, Rathelot, and Roulet, 2019)

Column 4 presents estimates using the double-bound dichotomous choice format. This method has fewer inconsistencies relative to the other methods, with the only two surprises being that there is almost no value placed on meals at the workplace and that free daycare is seen as a disamenity, with estimates suggesting that individuals would need to be paid 59EGP more to take a job that provides that service.

Column 5 provide the estimates from the Discrete Choice Experiment (DCE) elicitations. As described above, we implemented the DCE on the full sample, as we hypothesized that this method would be the most accurate. To make the comparison of the DCE results to the other methods similar in the number of observations, we chose a random third of the sample to analyze in this table.

We find that the DCE provides estimates with standard errors that are between the payment card method and the double bound method. At the same time the estimates are the most consistent with what economic theory would predict. Compensating differentials increase with commute time, the value of health insurance increases when it covers spouses in addition to the employee, and free meals and free daycare are seen as valuable amenities that make people want the job more.

The fact that the DCE results are the only method that provide estimates on all of the job attributes in line with basic economic theory leads us to prefer the DCE method over the others for their accuracy. This is in line with our prior expectations, since discrete choice experiments mimic real world decisions better than the other methods. In section 4 we use the DCE results from the full sample to explore how job attributes are valued differently by different demographic groups and finds results that continue to be consistent with theory, while also allowing us to quantify the importance of different amenities for different people.

3.3 (In)Consistency *within* Elicitation Methods

In addition to comparing the estimates across elicitation methods we implemented a few small experiments that allow us to test for consistency *within* an elicitation method. These experiments allow us to test whether responses depend on the order the questions are presented to the respondents as well as if the range of values provided in the pay-card and double-bound methods affect valuation estimates.

In the first auxiliary experiment, some individuals were assigned a first job offer that does not include health insurance, and the second and third offers added this amenity for themselves and their spouses, respectively. Another group of respondents faced a first job offer that included health insurance for themselves and their spouse, and the following two offers progressively removed the number of people covered by this amenity. No other job characteristic of the pool that we tested was included in these offers.

We use the responses of to these three offers to test whether the order in which amenities appear influence the value given to them. For this, in each model we estimate we include a dummy that takes value 1 for individuals assigned to the offers that start with no health insurance and progressively adds coverage, and interaction between this "treatment" variable and each type of health insurance coverage.

The results are shown in Table 6. We report the estimated value of health insurance for each method as well as an interaction effect for individuals who got a question with a job with health insurance first. We see that the interaction effects are not statistically significant in the open ended or pay card methods, but one is marginally significant in the double bound method. We also include a p-value for the joint test of significance and find that question order effects estimated valuations in the double bound method but not in the others.

In the second auxiliary experiment we vary the range of options individuals are provided in the pay card and double bound methods. For the pay card method some individuals were shown "low" values (EGP 1000 to EGP 2200 in EGP 200 intervals) and others where shown "high" values (EGP 1400 to EGP 2600 in EGP 200 intervals). Appendix Table D1 presents estimates for the payment card format including interaction terms between each attribute and and indicator for being shown the "low values". Those faced with a card with lower values tend to have an average reservation wage

EGP 230 lower than those shown the card with higher values. In addition, respondents assigned to cards with lower values exhibit a lower willingness to pay for some of these non-wage characteristics, even though we should not expect valuations for the different attributes to change with the choices given to respondents. This shows that estimates using the pay card method are sensitive the values chosen by the researchers.

A final auxiliary experiment changes the value that was added or subtracted to the response given using the double bound method. Individuals were asked two binary questions - would you accept this job if it paid "X", and then a second question: "would you accept this job if it paid "X+Y" if they said no, or "X-Y" if they said yes. Appendix Table D2 reports includes dummy variables for the different values that are added or subtracted from the baseline wage. The estimates from column 1 & 2 are nearly identical, implying that the results are not sensitive to this parameter.

4 What do different Jobseekers Value?

A major benefit of being able to estimate the value of job attributes is the ability to understand how the value of these attributes differ by job seeker characteristics. Previous studies have shown that men and women have different preferences for attributes such as commute time (Le Barbanchon et al., 2019) and work flexibility (Mas and Pallais, 2017). We are able to expand on this earlier work by considering additional attributes as well as heterogeneity across additional individual characteristics. In particular, in addition to gender we consider 3 characteristics motivated by the literature: marital status (He et al. (forthcoming)), level of education (Hamermesh, 1999), and duration of unemployment (Krueger and Mueller, 2016).

Gender differences in valuations

Our study includes attributes that may be valued differently by men and women. Table 5 presents the estimates of job attribute valuations from the discrete choice experiment for men and women separately. Column 1 includes estimates from using all the data we collected[6] from the pooled sample. We have more than twice as many men in our sample as women, so confidence intervals

[6]Recall that individuals were randomized into on of three groups, and everyone in the sample was asked to answer the questions in the DCE which gives us three times as many observations for that method relative to the others. In Table 3 we chose a random third of respondents to make the number of observations comparable across methods.

for women tend to be larger.

The results show that men and women have different willingness to pay for most of the attributes we included in our survey. These differences are both economically and statistically significant. First, women require almost twice as much compensation to accept jobs that are further away from their homes relative to men. Women also require twice as much compensation for jobs that require them to work on weekends. On the other hand, women are willing to give up a larger amount of their salary than men if their job provides them with on-site daycare. The differences in the value for these attributes might be a consequence of women being less able than men to substitute paid work for household responsibilities. Men have a higher willingness to pay for health insurance, although this difference is only marginally significant. It's also reassuring to see that men and women value meals at work equally, as this is an individually provided amenity whose value we would not expect to differ much by gender. Finally, men also have a 30% higher baseline wage than women.

Heterogeneity by Marital Status

Individuals may value job characteristics differently based on their family situation[7]. In columns 1 and 2 of Table 6 we show how estimates differ between those who are married and those who are not. We then split by gender, showing the differences between married and unmarried men in columns 4 and 5 and married and unmarried women in columns 7 and 8 [8]. The results indicate that married individuals value the provision of health insurance for them and their spouse more than single respondents, a result driven mostly by men rather than women. This is not surprising since in Egypt men are predominantly the breadwinners, and women's spouses may already have health insurance coverage.

Married respondents also have a higher willingness to pay for on-site daycare provision, a result completely driven by women, as one would expect if women are primarily responsible for household chores including childcare. In fact, these estimates are quite similar to those obtained when we split the sample by whether the respondent has dependents (the correlation between being married and having dependents is 0.59), which we show in Appendix G. Finally, both men and women have a

[7]He et al. (forthcoming) finds that married job seekers (irrespective of gender) are more attracted to jobs with flexible work arrangements than unmarried ones.

[8]The marital status variable was obtained from our partner's administrative records which were partially incomplete and leading to a partially reduced sample size.

higher baseline wage than single individuals. For the other attributes included in our experiment, we do not find statistically significant differences in willingness to pay.

Heterogeneity by Education Level

We next consider the difference in valuations by education level. A stylized fact in the labor market is that jobs that have higher wages tend to also have better amenities (Acemoglu and Autor, 2011). This is the result of more productive individuals receiving a higher total compensation than those with lower skills. However, the fact that part of this compensation takes the form of fringe benefits could reflect that high skill individuals have a higher valuation for such amenities.

We test for this in our setting by splitting the sample between job seekers with some tertiary education (which we denote "high education"), and those with up to secondary school (whom we refer as "low education"). Table 7 presents the results. We find that more educated individuals are nearly twice as sensitive to longer commutes as those with lower educational attainment, consistent with a greater opportunity cost of time. They value health insurance slightly more but this difference is not statistically significant. They are need to be paid more to work on weekends. There are no differences by education level in the value of meals or daycare.

When we disaggregate further by gender most of the differences hold, with a notable exception related to the value of health insurance for highly educated women, who value you it more than their counterparts with lower educational attainment. Interestingly baseline reservation wages do not differ much between those with higher and lower levels of educational attainment. This may be because individuals are well informed of the average wages offered in the the types of jobs that are provided by the job matching agency that we partnered with.

Heterogeneity by Unemployment Duration

Finally, in Table 8 we also consider how long people had spent looking for a job when they filled our survey. We classify individuals into long and short-term unemployed if they have been looking for a job for less than 12 months, which constitutes about 80% of our sample. The only significant differences are in valuation of health insurance. The long-term unemployed hold lower valuations on average than those who are short-term unemployed. They also tend to have lower reservation wages relative to the short-term unemployed, although this difference is not statistically significant.

This is consistent with the evidence that suggests that reservation wages decrease as an individuals unemployment spell lengthens (Krueger and Mueller, 2016; Marinescu and Skandalis, 2019). These results show that individuals who long term unemployed do not seem to be so because they have unrealistic expectations about the wages and amenities they are due in the labor market. On the other hand we note that this group constitutes a selected sample, individuals may be unemployed for a long time as a consequence of earlier high values they assigned to non-wage characteristics. A longitudinal study of attribute valuation would help shed light on this issue.

5 Discussion and Policy Implications

Our results lead to several important implications. First, estimated reservation wages are very sensitive to the method used to elicit them. This is particularly important since the worst performing method to estimate reservation wages (open ended questions) is the method that is most widely used in the literature Krueger and Mueller (2016). Scholars and practitioners would be better served using different methods, with discrete choice experiments performing best. While DCE are more involved, they are also more intuitive and only take 40 seconds longer to implement on average relative to the open ended questions commonly used in the literature.

Accurately estimating reservation wages is important for policymakers who are interested crafting policies around unemployment insurance and income taxes. If reservation wages are incorrectly estimated unemployment insurance policies may be miscalibrated and either be too generous or not generous enough, leading to increased frictions in the labor market. Similarly accurately assessing the impact of taxes and tax credits, such as the EITC, will help improve our understanding of how those types of policies can shift people in and out of employment. By setting taxes too high policymakers risk pricing people out of work, while setting the EITC tax credits too low could lead to missing people whose reservation wages are high.

Our results also speak to how valuation for job attributes differ by individual characteristics. This is directly relevant for efforts that try to increase labor force participation by underrepresented groups. By identifying which job attributes are most highly valued by individuals in those groups policymakers could target those types of amenities through subsidies or direct regulation. For example, daycare options were highly valued by women, who are woefully underrepresented in the

Egyptian labor market, where female labor force participation is 23% (ILO, 2016) [9].

Another important way to utilize these results would be for firms to implement this type of measurement procedures with existing or potential employees. This can help firms craft bundles of amenities that are more in line with employee preferences. For example, if employees value certain perks that are less costly for the employer to provide than for the employee to provide for themselves (like meals, or daycare, or a gym, etc) then it may be worthwhile for the employer to begin incorporating those perks into the offer bundle to employees, even if that leads to a decrease in the overall salary provided. Linking these types of data with data on worker productivity could also provide an effective device to bring in the most productive workers (in line with the interview incentives provided in Abebe et al. (2019)).

Limitations

As with any research endeavor, our study suffers from several limitations. One important limitation is that we do not empirically validate the estimates from the different stated preference approaches within a revealed preference framework. If we were able to provide actual job offers to job seekers and randomize the attributes of the job itself (as in Mas and Pallais (2017)) we would be able to empirically validate the estimates from our approach. Instead we rely on theory to guide us to which methods are more logically consistent with our understanding of the labor market.

It is possible that theory can be misleading here. In particular we used the valuations placed on free meals and free daycare to disqualify measurement strategies that provided estimates that gave negative values to positive amenities. There is a chance that these amenities are seen as indicators of other aspects of the jobs that job seekers try to avoid. For example, maybe working at a place that has free meals is associated with a low prestige set of jobs and the negative valuation is a proxy for the prestige of the job and not the meals itself. We are not able to rule out this possibility.

Another limitation is that our sample is comprised of individuals who have selected into working with a particular job matching center. The valuations that we estimate are going to be dependant on those in our sample. Our estimates about the differences between men and women may just be a difference between the men and women who use this job matching center. This issue of external

[9] Egypt comes in as the 10th lowest out of 189 countries that the World Bank collects data for. India, for reference, is ranked 11th lowest and has a female labor force participation rate of 23.4%. Of the 10 countries with the lowest rates, 9 are in the Middle East North Africa region.

validity is important in any study of a non-representative sample. We compare our sample to a representative survey, which allows us to show that our sample is similar to the general jobseeker population in out context. Nonetheless we cannot rule out that there may be important differences in unobservable characteristics.

6 Conclusion

Reservation wages and the value placed on non-wage job amenities are important parts of understanding labor market behavior of unemployed individuals. These parameters can help policymakers generate more effective employment tax and incentive schemes and help employers craft more efficient employee compensation bundles. For instance, if workers value certain non-wage amenities more than what it cost to provide them, these amenities may be a way for firms to attract workers and reduce the cost of employment. However, estimating the value that workers assign to job characteristics has proven challenging.

We find large differences in the estimates obtained using 4 different elicitation methods. Estimated reservation wages range from 1861EGP to 2711EGP. Estimated job amenity values can also differ widely by method. For instance the estimated compensating differential for working on the weekend ranges for from EGP 320, or 13% of the baseline wage using open ended questions, to 134EGP or 6% of the baseline salary using pay-card elicitation.

Overall, estimates from the discrete choice experiment perform best. DCE estimates are consistent with results from basic economic theory and estimates from other papers in the literature.

Future work could benefit from implementing these tests on different samples and with other job attributes. In addition, the question of whether estimates from hypothetical questions reflect job seekers' valuations of job attributes in real decisions remains open. Finding a logistically feasible way to validate the results of these methods with a revealed preference approach using real jobs would be of high value. (He et al., forthcoming) make a first attempt at this by randomly varying the work arrangement offered in IT job ads posted in a Chinese job board and studying how job seekers trade flexible arrangements for salary when deciding whether to apply for the job offered. Their work suggests there is scope for more work including different amenities and more diverse types of job seekers.

Collecting these data over time for the same set of job seekers would also be useful and could provide information on how reservation wages change over time as well as how valuations of different job attributes change over time. This could be valuable even after individuals find a job, as the value placed on certain amenities can change as people's work experience allow them to learn more about which amenities they value most in a job.

References

Abebe, G., Caria, S., & Ortiz-Ospina, E. (2019). *The selection of talent.*

Acemoglu, D. & Autor, D. (2011). Skills, tasks and technologies: Implications for employment and earnings. In *Handbook of labor economics* (Vol. 4, pp. 1043–1171). Elsevier.

Adamowicz, W., Louviere, J., & Williams, M. (1994). Combining revealed and stated preference methods for valuing environmental amenities. *Journal of environmental economics and management*, *26*(3), 271–292.

Bateman, I. J., Carson, R. T., Day, B., Hanemann, M., Hanley, N., Hett, T., ... Pearce, D. W., et al. (2002). Economic valuation with stated preference techniques: A manual. *Economic valuation with stated preference techniques: a manual.*

Brown, T. C., Champ, P. A., Bishop, R. C., & McCollum, D. W. (1996). Which response format reveals the truth about donations to a public good? *Land Economics*, 152–166.

Burdett, K. & Mortensen, D. T. (1998). Wage differentials, employer size, and unemployment. *International Economic Review*, 257–273.

Caliendo, M., Lee, W.-S., & Mahlstedt, R. (2017). The gender wage gap and the role of reservation wages: New evidence for unemployed workers. *Journal of Economic Behavior & Organization*, *136*, 161–173.

Caliendo, M., Tatsiramos, K., & Uhlendorff, A. (2013). Benefit duration, unemployment duration and job match quality: A regression-discontinuity approach. *Journal of applied econometrics*, *28*(4), 604–627.

Cameron, A. C. & Trivedi, P. K. (2005). *Microeconometrics: Methods and applications*. Cambridge university press.

Cameron, T. A., Poe, G. L., Ethier, R. G., & Schulze, W. D. (2002). Alternative non-market value-elicitation methods: Are the underlying preferences the same? *Journal of Environmental Economics and Management*, *44*(3), 391–425.

Carson, R. T. & Hanemann, W. M. (2005). Contingent valuation. *Handbook of environmental economics*, *2*, 821–936.

Carson, R. T., Mitchell, R. C., Hanemann, M., Kopp, R. J., Presser, S., & Ruud, P. A. (2003). Contingent valuation and lost passive use: Damages from the exxon valdez oil spill. *Environmental and resource economics*, *25*(3), 257–286.

DellaVigna, S., Lindner, A., Reizer, B., & Schmieder, J. F. (2017). Reference-dependent job search: Evidence from hungary. *The Quarterly Journal of Economics*, *132*(4), 1969–2018.

Eriksson, T. & Kristensen, N. (2014). Wages or fringes? some evidence on trade-offs and sorting. *Journal of Labor Economics*, *32*(4), 899–928.

Faberman, R. J., Mueller, A. I., Şahin, A., & Topa, G. (2017). *Job search behavior among the employed and non-employed*. National Bureau of Economic Research.

Galenianos, M. & Kircher, P. (2009). Directed search with multiple job applications. *Journal of economic theory*, *144*(2), 445–471.

Greene, W. H. & Hensher, D. A. (2003). A latent class model for discrete choice analysis: Contrasts with mixed logit. *Transportation Research Part B: Methodological*, *37*(8), 681–698.

Hall, R. E. & Mueller, A. I. (2018). Wage dispersion and search behavior: The importance of nonwage job values. *Journal of Political Economy*, *126*(4), 1594–1637.

Hamermesh, D. S. (1999). Changing inequality in markets for workplace amenities. *The Quarterly Journal of Economics*, *114*(4), 1085–1123.

Hanemann, M., Loomis, J., & Kanninen, B. (1991). Statistical efficiency of double-bounded dichotomous choice contingent valuation. *American journal of agricultural economics*, *73*(4), 1255–1263.

He, H., Neumark, D., & Weng, Q. (forthcoming). Do workers value flexible jobs? a field experiment. *Journal of Labor Economics*.

ILO. (2016). Employent by sex and age – ilo modelled estimates. ILOSTAT. Accessed 02-14-2020, https://ilostat.ilo.org/data.

Kolstad, J. T. & Kowalski, A. E. (2016). Mandate-based health reform and the labor market: Evidence from the massachusetts reform. *Journal of health economics*, *47*, 81–106.

Krueger, A. B. & Mueller, A. I. (2016). A contribution to the empirics of reservation wages. *American Economic Journal: Economic Policy*, *8*(1), 142–79.

Lavetti, K. & Schmutte, I. M. (2018). Estimating compensating wage differentials with endogenous job mobility.

Le Barbanchon, T., Rathelot, R., & Roulet, A. (2019). Gender differences in job search: Trading off commute against wage. *Available at SSRN 3467750*.

Maestas, N., Mullen, K. J., Powell, D., Von Wachter, T., & Wenger, J. B. (2018). *The value of working conditions in the united states and implications for the structure of wages*. National Bureau of Economic Research.

Marinescu, I. E. & Skandalis, D. (2019). Unemployment insurance and job search behavior. *Available at SSRN 3303367*.

Mas, A. & Pallais, A. (2017). Valuing alternative work arrangements. *American Economic Review*, *107*(12), 3722–59.

McFadden, D. & Train, K. (2000). Mixed mnl models for discrete response. *Journal of applied Econometrics*, *15*(5), 447–470.

Mitchell, R. C. & Carson, R. T. (1981). An experiment in determining willingness to pay for national water quality improvements. *draft report to the US Environmental Protection Agency, Washington, DC*.

Neumark, D. & Wascher, W. (2011). Does a higher minimum wage enhance the effectiveness of the earned income tax credit? *ILR Review*, *64*(4), 712–746.

OAMDI. (2019). Harmonized labor force surveys (HLFS). http://erf.org.eg/data-portal/. Version 1.0 of Licensed Data Files; LFS 2017- Central Agency for Public Mobilization and Statistics (CAPMAS). Egypt: Economic Research Forum (ERF).

Oyer, P. (2008). Salary or benefits? In *Work, earnings and other aspects of the employment relation* (pp. 429–467). Emerald Group Publishing Limited.

Oyer, P. & Schaefer, S. (2005). Why do some firms give stock options to all employees?: An empirical examination of alternative theories. *Journal of financial Economics*, *76*(1), 99–133.

Pissarides, C. A. (2000). *Equilibrium unemployment theory*. MIT press.

Revelt, D. & Train, K. (1998). Mixed logit with repeated choices: Households' choices of appliance efficiency level. *Review of economics and statistics*, *80*(4), 647–657.

Rosen, S. (1986). The theory of equalizing differences. *Handbook of labor economics*, *1*, 641–692.

Rowe, R. D., Schulze, W. D., & Breffle, W. S. (1996). A test for payment card biases. *Journal of environmental Economics and management*, *31*(2), 178–185.

Shimer, R. & Werning, I. (2007). Reservation wages and unemployment insurance. *The Quarterly Journal of Economics*, *122*(3), 1145–1185.

Stern, S. (2004). Do scientists pay to be scientists? *Management science*, *50*(6), 835–853.

Tourangeau, R., Rips, L. J., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge University Press.

Welsh, M. P. & Poe, G. L. (1998). Elicitation effects in contingent valuation: Comparisons to a multiple bounded discrete choice approach. *Journal of environmental economics and management*, *36*(2), 170–185.

Wiswall, M. & Zafar, B. (2017). Preference for the workplace, investment in human capital, and gender. *The Quarterly Journal of Economics*, *133*(1), 457–507.

Figure 1: Example of open-ended question asked to respondents

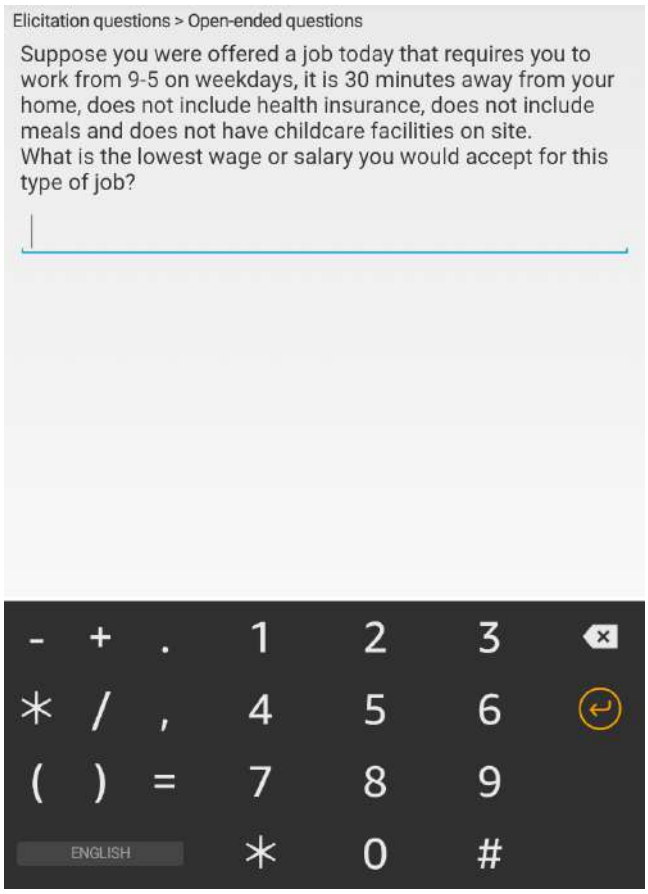


Figure 2: Example of payment card question asked to respondents

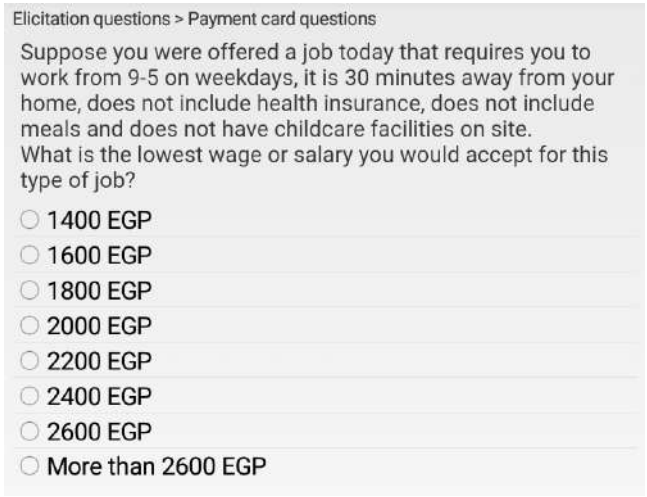


Figure 3: Example of double-bound dichotomous choice question asked to respondents

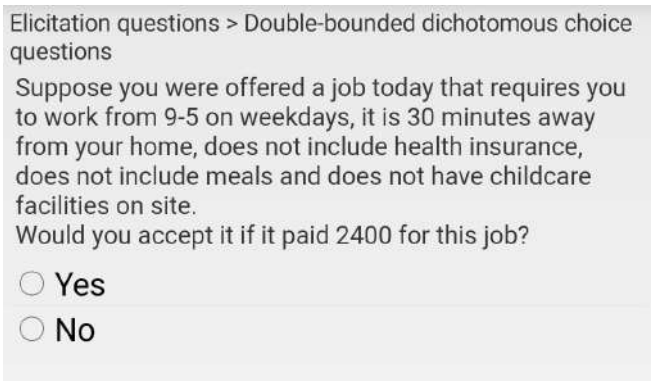


Figure 4: Example of discrete choice question asked to respondents

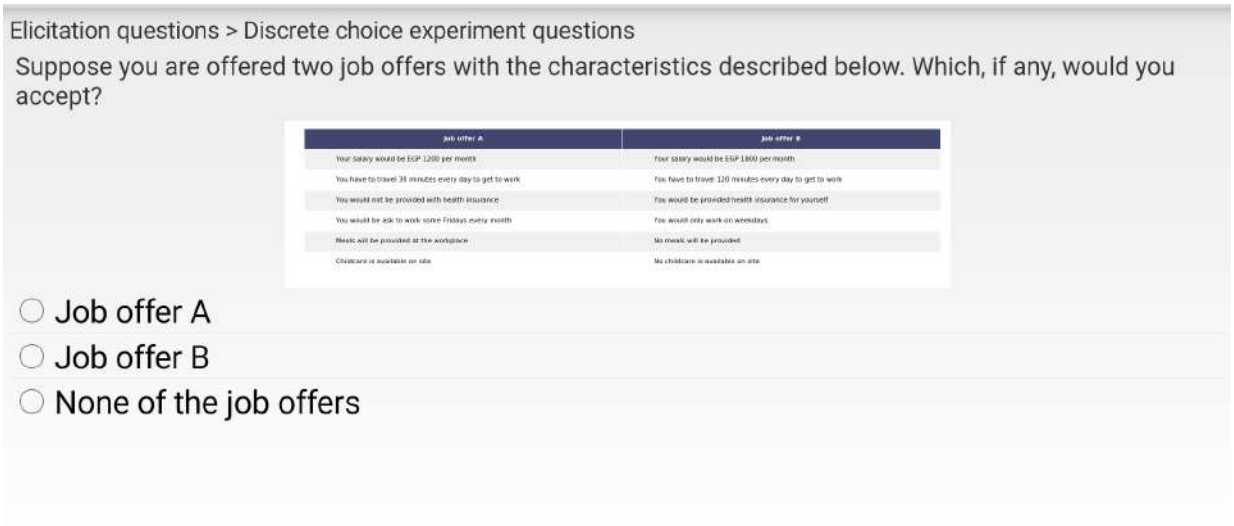


Table 1: Summary statistics of survey respondents and comparison with 2017 Labor Force Survey

Panel A: Survey Participants	All			Men			Women		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
Age	26.64	6.19	1996	27.27	6.28	1405	25.15	5.73	591
Share male	0.70	0.46	1996						
Share married	0.29	0.46	1637	0.30	0.46	1159	0.28	0.45	478
Number of dependents	0.87	1.20	1637	0.91	1.26	1159	0.78	1.04	478
Years of education	12.83	4.00	1637	12.78	3.93	1159	12.94	4.18	478
Unemployment spell (months)	8.27	16.54	1628	8.00	16.55	1143	8.92	16.51	485
Hours spent last week looking for a job	20.41	20.32	1679	21.67	20.80	1175	17.47	18.86	504
Hours spent on average looking for a job	14.31	15.86	1679	15.70	16.75	1175	11.07	13.01	504
Number of methods used to look for a job	1.70	1.56	1996	1.69	1.60	1405	1.72	1.47	591
Panel B: 2017 Labor Force Survey	All			Men			Women		
Age	25.62	6.32	8826	24.71	6.27	4661	26.66	6.23	4165
Share male	0.53	0.50	8826						
Share married	0.24	0.43	8826	0.10	0.30	4661	0.40	0.49	4165
Years of education	12.47	3.82	8826	11.79	4.19	4661	13.23	3.17	4165
Unemployment spell (months)	32.98	35.78	8826	24.08	25.44	4661	43.14	42.55	4165
Number of methods used to look for a job	2.28	1.40	8826	2.37	1.44	4661	2.18	1.35	4165
Panel C: Job Seekers Who Didn't Take Survey	All			Men			Women		
Age	29.46	6.71	1931	30.05	6.64	678	29.14	6.74	1253
Share male	0.35	0.48	1931						
Share married	0.57	0.49	1931	0.46	0.50	678	0.64	0.48	1253
Number of dependents	1.29	1.31	1931	1.26	1.47	678	1.31	1.22	1253
Years of education	11.20	5.02	1931	11.71	4.47	678	10.92	5.27	1253

Notes: Panel A shows the mean and standard deviation for demographic characteristics and job search behavior of our survey respondents. Sample size for each characteristic vary depending on our ability to match data from our respondents to that collected by our partner NGO. Panel B presents the corresponding demographic characteristics for individuals who signed up to receive the services of our partner NGO over the same period of time but did not fill out our survey. Panel C presents the corresponding demographic characteristics and search behavior (if available) according to unemployed individuals in the 2017 Labor Force Survey. Hours spent looking for a job and unemployment spell variables winsorized at the bottom and top 5%.

Table 2: P-values of difference between wages at baseline across formats

Panel A: Estimated Reservation Wages					
	Open Ended	Open Ended Winsorized	Pay Card	Double Bound	Discrete Choice Experiment
	(1)	(2)	(3)	(4)	(5)
Reservation wage for baseline job	2711	2515	2238	2045	1861
	(157.77)	(38.11)	(20.16)	(29.58)	(43.76)
Observations	4620	4620	4704	4634	9975
Number of Individuals	660	660	672	662	665

Panel B: P-Values for Pair-wise Comparisons of Reservation Wages			
	Pay Card	Double Bound	Discrete Choice Experiment
Open Ended	0.003	0.000	0.000
Pay Card		0.000	0.000
Double Bound			0.001

Notes: Panel A reports estimated reservation wages using each method, but chooses one third of DCE sample to keep the number of individual respondents similar. Standard errors clustered at the individual level in parentheses. Panel B reports the p-value of the test that the wage at baseline is equal between the elicitation format depicted in the row title and the elicitation format in the column title.

Table 3: Estimates of willingness to pay for job attributes according to each elicitation format

	Open ended	Open ended winsorized	Pay Card	Double Bound	Discrete choice experiment
	(1)	(2)	(3)	(4)	(5)
Commute time (60 Minutes)	152.79	182.10***	37.75	184.15***	110.60***
	(123.20)	(55.66)	(40.00)	(51.63)	(27.42)
Commute time (90 Minutes)	148.58	274.02***	159.38***	190.25***	186.76***
	(105.51)	(59.98)	(45.20)	(52.95)	(36.91)
Commute time (120 Minutes)	303.77***	406.20***	67.63*	203.27***	312.48***
	(107.82)	(63.12)	(35.67)	(53.36)	(41.48)
Health insurance (self)	-301.43***	-166.15***	-145.45***	-132.95***	-121.93***
	(105.16)	(23.05)	(19.07)	(35.64)	(26.86)
Health insurance (self & spouse)	-221.99**	-196.12***	-91.24***	-231.73***	-219.73***
	(86.21)	(23.10)	(30.37)	(22.70)	(28.50)
Need to work on Friday	320.68***	324.36***	134.42***	233.71***	128.38***
	(109.39)	(28.24)	(17.02)	(34.32)	(21.35)
Meals provided at workplace	14.46	82.53***	-18.12	-4.60	-80.68***
	(87.46)	(24.85)	(15.34)	(33.32)	(18.01)
Daycare provided at workplace	-45.10	80.56***	-10.59	58.93*	-53.25***
	(77.37)	(24.82)	(17.20)	(33.47)	(18.38)
Observations	4620	4620	4704	4634	9975
Number of Individuals	660	660	672	662	665

Notes: Each column reports the willingness to pay for each job attribute obtained from the different elicitation methods. Open-ended estimates were obtained by regressing the stated wage on indicators for each of the characteristics specified. Payment card estimates were obtained by maximum likelihood where the dependent variable is the interval between the value chosen and the closest value available below the one chosen, using a model where all characteristics are interacted with a dummy that takes value 1 if the payment card shows a range of lower values. Double bound estimates were obtained by maximum likelihood using the intervals provided by the Yes/No answers to each job offer given by the respondent. Discrete choice experiment correspond to a random sample of one third of respondents to match the sample size to those of other elicitation methods. Estimates were obtained using a mixed logit model in the willingness to pay space estimated by maximum likelihood. Estimates for the winsorized open-ended format obtained by winsorizing at the top 1% of responses. Reservation wage at baseline corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. Standard errors clustered at the individual level between parenthesis.
*** p<0.01, ** p<0.05, *p<0.1

Table 4: Sensitivity of Responses Based on Randomized First Question in Series

	Open Ended	Pay Card	Double Bound
	(1)	(2)	(3)
Health insurance (self)	-219.08***	-142.64***	-125.50**
	(68.77)	(17.59)	(53.34)
Health insurance (self & spouse)	-176.97*	-74.74***	-374.30***
	(93.61)	(19.36)	(51.93)
Health insurance (self) × Treatment	-168.99	4.58	-94.04
	(283.99)	(20.18)	(75.19)
Health insurance (self & spouse) × Treatment	-103.56	-15.30	136.20*
	(317.11)	(23.19)	(73.90)
P-value of no effect for interaction terms	0.653	0.560	0.006
Observations	1980	2016	1986
Number of Individuals	660	672	662

Notes: The table shows estimates from the open ended, pay card and double bound dichotomous choice depending on whether the baseline (first) job shown includes health insurance for the respondent and their spouse. P-value of no effect for interaction terms refers refers to the joint test of significance of the two interaction terms. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Table 5: Discrete choice experiment estimates by gender

	Pooled sample	Men	Women	P-value of difference
	(1)	(2)	(3)	(4)
Commute time (60 Minutes)	86.30***	68.01***	127.27***	0.09
	(15.22)	(16.85)	(30.39)	
Commute time (90 Minutes)	180.20***	154.94***	238.47***	0.07
	(20.15)	(21.89)	(41.17)	
Commute time (120 Minutes)	295.87***	237.47***	423.04***	0.00
	(22.26)	(25.82)	(53.44)	
Health insurance (self)	-104.06***	-112.89***	-56.54**	0.08
	(14.96)	(16.93)	(27.81)	
Health insurance (self & spouse)	-199.83***	-210.51***	-148.24***	0.13
	(15.95)	(17.80)	(37.07)	
Need to work on Friday	146.68***	113.07***	222.10***	0.01
	(12.58)	(12.82)	(39.11)	
Meals provided at workplace	-101.94***	-102.57***	-85.91***	0.47
	(10.77)	(11.99)	(19.49)	
Daycare provided at workplace	-49.51***	-33.53***	-87.12***	0.04
	(10.12)	(10.49)	(23.27)	
Reservation wage at baseline	1877	1984	1550	0.00
Observations	29940	21075	8865	
Number of Individuals	1996	1405	591	

Notes: Column 1 shows the estimates of willingness too pay for different job attributes obtained from the discrete choice experiment on the full sample of survey respondents. Columns 2 and 3 present the results for men and women separately, and column 4 shows the p-value of the difference in valuation for each attribute across gender. Reservation wage at baseline corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. The number of observations corresponds to the number of individual-choice pairs. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Table 6: Discrete choice experiment estimates by marital status

	Pooled sample			Men			Women		
	Married	Single	P-value of difference	Married	Single	P-value of difference	Married	Single	P-value of difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Commute time (60 Minutes)	34.1	82.24***	0.19	12.4	74.52***	0.12	85.1	108.61***	0.76
	(31.52)	(19.15)		(32.76)	(21.71)		(63.92)	(42.04)	
Commute time (90 Minutes)	139.36***	163.73***	0.61	94.15**	154.77***	0.25	231.25***	214.09***	0.87
	(38.82)	(27.83)		(40.98)	(32.44)		(75.74)	(70.63)	
Commute time (120 Minutes)	212.64***	286.52***	0.13	171.69***	240.99***	0.17	340.03***	374.65***	0.78
	(37.65)	(30.52)		(37.93)	(32.07)		(98.74)	(77.94)	
Health insurance (self)	-113.65***	-109.09***	0.90	-103.83***	-134.49***	0.48	-91.5	-31.3	0.51
	(31.72)	(19.11)		(37.17)	(21.71)		(68.17)	(53.76)	
Health insurance (self & spouse)	-258.73***	-173.81***	0.03	-271.41***	-187.89***	0.07	-172.56***	-131.30***	0.59
	(33.93)	(20.01)		(39.73)	(23.05)		(64.72)	(40.46)	
Need to work on Friday	118.55***	135.36***	0.54	102.77***	115.70***	0.66	142.31***	208.17***	0.25
	(22.07)	(15.84)		(22.87)	(18.42)		(45.00)	(35.47)	
Meals provided at workplace	-89.69***	-95.96***	0.80	-100.79***	-100.78***	1.00	-69.10*	-96.10***	0.58
	(20.40)	(13.64)		(23.19)	(16.22)		(39.34)	(29.36)	
Daycare provided at workplace	-107.20***	-32.47**	0.01	-29.3	-33.62**	0.86	-301.23***	-33.0	0.00
	(23.01)	(12.94)		(20.46)	(14.07)		(60.85)	(34.74)	
Reservation wage at baseline	2097	1847	0.00	2168	1962	0.00	1811	1525	0.03
Observations	7140	17310		5115	12180		2025	5130	
Number of Individuals	476	1154		341	812		135	342	

Notes: The table shows the discrete choice experiment estimates of the value for each job characteristic for married and single respondents separately, as well as the p-value of the difference in valuation for each attribute across marital status. Reservation wage at baseline corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. The number of observations corresponds to the number of individual-choice pairs. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Table 7: Discrete choice experiment estimates by level of education

	Pooled sample			Men			Women		
	High education (1)	Low education (2)	P-value of difference (3)	High education (4)	Low education (5)	P-value of difference (6)	High education (7)	Low education (8)	P-value of difference (9)
Commute time (60 Minutes)	90.27***	51.81**	0.29	89.60***	33.4	0.14	91.6	114.17**	0.77
	(28.76)	(21.90)		(29.54)	(23.91)		(59.58)	(47.59)	
Commute time (90 Minutes)	219.96***	115.20***	0.07	200.33***	101.49***	0.05	286.05***	186.27***	0.41
	(48.57)	(27.80)		(39.71)	(32.43)		(107.44)	(57.35)	
Commute time (120 Minutes)	415.42***	204.81***	0.12	344.22***	180.13***	0.03	487.78***	292.94***	0.13
	(130.45)	(27.67)		(68.43)	(31.20)		(92.03)	(81.43)	
Health insurance (self)	-132.61***	-98.32***	0.32	-121.73***	-140.33***	0.64	-188.14***	53.1	0.00
	(27.89)	(20.80)		(32.21)	(23.62)		(51.23)	(41.03)	
Health insurance (self & spouse)	-226.83***	-184.62***	0.25	-219.83***	-210.29***	0.82	-246.64***	-77.18*	0.02
	(29.16)	(22.11)		(31.78)	(27.94)		(57.34)	(41.57)	
Need to work on Friday	169.32***	115.58***	0.08	135.01***	94.67***	0.19	233.62***	174.02***	0.35
	(25.94)	(15.54)		(24.80)	(17.77)		(49.14)	(40.13)	
Meals provided at workplace	-113.78***	-83.98***	0.22	-131.12***	-80.11***	0.10	-42.2	-111.78***	0.14
	(19.91)	(14.46)		(25.36)	(17.53)		(36.24)	(29.33)	
Daycare provided at workplace	-47.57***	-56.59***	0.70	-36.56*	-28.72*	0.75	-78.04*	-134.38***	0.31
	(18.28)	(14.85)		(18.87)	(15.01)		(42.38)	(36.22)	
Reservation wage at baseline	1922	1927	0.95	2028	2027	1.00	1648	1572	0.54
Observations	9150	15300		6210	11085		2940	4215	
Number of Individuals	610	1020		414	739		196	281	

Notes: The table shows the discrete choice experiment estimates of the value for each job characteristic for respondents with tertiary education ("High education") and high school or less ("Low education") separately, as well as the p-value of the difference in valuation for each attribute across level of education. Reservation wage at baseline corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. The number of observations corresponds to the number of individual-choice pairs. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Table 8: Discrete choice experiment estimates by time searching for a job

	Pooled sample			Men			Women		
	Long-term unemployed (1)	Short-term unemployed (2)	P-value of difference (3)	Long-term unemployed (4)	Short-term unemployed (5)	P-value of difference (6)	Long-term unemployed (7)	Short-term unemployed (8)	P-value of difference (9)
Commute time (60 Minutes)	115.65***	74.15***	0.35	87.20*	70.70***	0.74	146.95*	119.05***	0.75
	(39.49)	(19.26)		(46.04)	(20.70)		(75.28)	(43.07)	
Commute time (90 Minutes)	206.79***	150.79***	0.32	114.69*	150.18***	0.62	401.67***	163.99***	0.15
	(51.03)	(24.64)		(65.87)	(25.91)		(150.50)	(60.08)	
Commute time (120 Minutes)	263.18***	266.12***	0.96	196.41***	224.58***	0.70	435.76***	437.97***	0.99
	(57.23)	(24.48)		(68.30)	(24.19)		(150.28)	(117.28)	
Health insurance (self)	-11.2	-116.00***	0.01	-65.2	-112.88***	0.30	164.4	-103.94***	0.02
	(35.69)	(17.71)		(41.33)	(19.96)		(106.59)	(36.48)	
Health insurance (self & spouse)	-114.46***	-210.18***	0.03	-110.90**	-217.10***	0.04	-76.7	-162.63***	0.29
	(38.68)	(19.11)		(46.03)	(21.23)		(70.86)	(40.48)	
Need to work on Friday	90.06***	142.05***	0.13	78.26**	114.96***	0.33	130.47**	247.38***	0.29
	(30.73)	(14.77)		(34.41)	(15.42)		(63.51)	(88.25)	
Meals provided at workplace	-113.44***	-92.75***	0.48	-118.85***	-100.57***	0.58	-146.84***	-62.22**	0.13
	(26.10)	(13.13)		(29.92)	(15.34)		(49.76)	(24.37)	
Daycare provided at workplace	-80.84***	-35.63***	0.14	-94.85***	-31.70**	0.06	-50.0	-61.03*	0.87
	(28.01)	(11.93)		(30.25)	(12.70)		(57.66)	(31.70)	
Reservation wage at baseline	1800	1909	0.15	1937	2016	0.33	1517	1524	0.96
Observations	4650	19740		3000	14115		1650	5625	
Number of Individuals	310	1316		200	941		110	375	

Notes: The table shows the discrete choice experiment estimates of the value for each job characteristic for individuals who have spent more or less time searching for a job than the median respondent, as well as the p-value of the difference in valuation for each attribute across unemployment spell. Reservation wage at baseline corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. The number of observations corresponds to the number of individual-choice pairs. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Appendix A Job attributes included in the survey and levels

The table below shows the different job attributes that could vary in the hypothetical job offers presented to a respondent. Except in the case of the Discrete Choice Experiment, only one job attribute was varied at a time with each offer shown.

Attribute	Levels
Commute time (one-way)	30 minutes 60 minutes 90 minutes 120 minutes
Included health insurance	No For the worker For the worker and spouse
Need to work on weekends	No Some weekends
Meals provided	No Yes
In-site daycare	No Yes

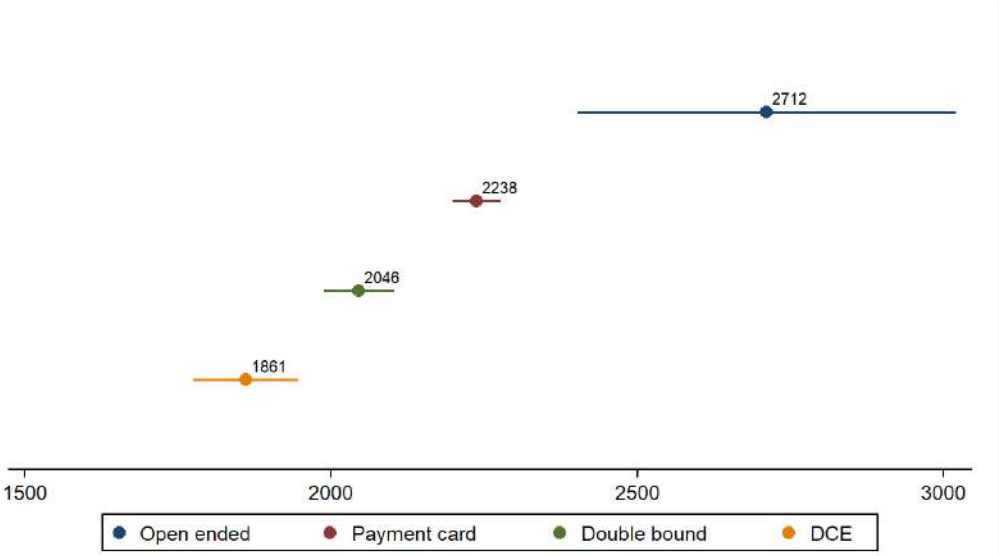
Appendix B List of questions by elicitation method

The table below shows an example of the series of questions asked to participants under each elicitation method apart from the discrete choice experiment. Sections in bold are show the job attribute that differs with respect to the first job described and mimics the way it is shown to survey participants. In the case of open ended questions, the respondent has to enter a value to answer each question. For payment card questions, the respondent is asked to choose a value from a list showed below each question. In the case of dichotomous choice questions, the question shown is replaced by 'Would you accept it if it paid $\$Z$ for this job?", where Z is a salary chosen at random. The value of X in question 4 corresponds to the distance (in time) between the respondent's home and the job, and it is one of either 60, 90 or 120.

Suppose you were offered a job today that requires you to work from 9-5 on weekdays, it is 30 minutes away from your home, does not include health insurance, does not include meals and does not have childcare facilities on site. What is the lowest wage or salary you would accept for this type of job?
Suppose you were offered a job today that requires you to work from 9-5 on weekdays, it is 30 minutes away from your home **it offers health insurance for you**, but does not include meals or health insurance on site. What is the lowest wage or salary you would accept for this type of job?
Suppose you were offered a job today that requires you to work from 9-5 on weekdays, it is 30 minutes away from your home **it offers health insurance for you and your spouse**, but does not include meals or childcare facilities on site. What is the lowest wage or salary you would accept for this type of job?
Suppose you were offered a job today that requires you to work from 9-5 on weekdays, **it is X minutes away from your home**, does not include health insurance, does not include meals and does not have childcare facilities on site. What is the lowest wage or salary you would accept for this type of job?
Suppose you were offered a job today that requires you to work from 9-5 on weekdays **and requires you to work on Friday instead of a weekday twice a month**, it is 30 minutes away from your home, does not include health insurance, does not includes meals and does not have childcare facilities on site. What is the lowest wage or salary you would accept for this type of job?
Suppose you were offered a job today that requires you to work from 9-5 on weekdays, it is 30 minutes away from your home, does not include health insurance, **includes meals at work**, and does not have childcare facilities on site. What is the lowest wage or salary you would accept for this type of job?
Suppose you were offered a job today that requires you to work from 9-5 on weekdays, it is 30 minutes away from your home, does not include health insurance, does not include meals, **but has on-site childcare facilities**. What is the lowest wage or salary you would accept for this type of job?

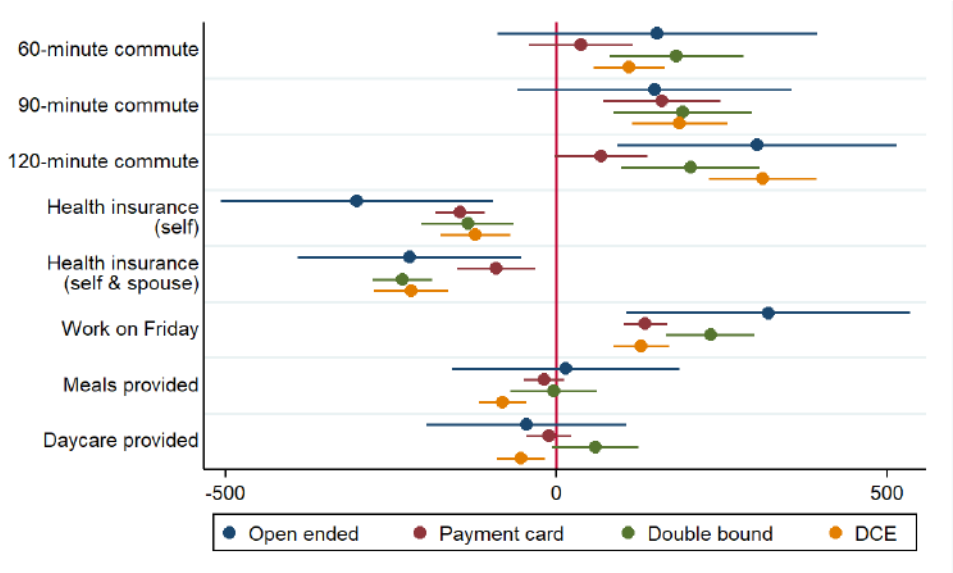
Appendix C Additional Figures

Figure 5: Reservation wages by elicitation method



Note: The Figure shows the point estimate and 95% confidence interval obtained from each elicitation method for the minimum wage at which an individual would accept a job that is 30 minutes away from their home and has none of the attributes included in our survey.

Figure 6: Estimates of WTP for job attributes by elicitation method



Note: The Figure shows the point estimate and 95% confidence interval obtained from each elicitation method for the different levels of each attribute included in our survey.

Appendix D Estimates of elicitation via open-ended questions - Winsorized responses

The following table presents the estimates of values implied by individual's responses among those assigned to the open-ended format. Columns 1 and 2 replicate the estimates shown in Table 3, where responses are not winsorized and winsorized at the bottom and top 1%, respectively. In turn, columns 3 and 4 show the results when responses are winsorized at the bottom and top 2% and 5%, respectively. We can reject at the 1% level the null hypothesis that the estimates are statistically equivalent across models.

Table C1: Estimates of Open-Ended elicitation with winsorized values

Cutoff	0%	1%	2%	5%
	(1)	(2)	(3)	(4)
Commute time (60 Minutes)	152.79	182.59***	179.72***	171.92***
	(123.20)	(55.53)	(52.56)	(41.50)
Commute time (90 Minutes)	148.58	273.37***	272.55***	241.82***
	(105.51)	(59.88)	(57.31)	(46.25)
Commute time (120 Minutes)	303.77***	407.58***	379.32***	307.46***
	(107.82)	(62.93)	(57.58)	(45.58)
Health insurance (self)	-301.43***	-126.58***	-117.68***	-95.06***
	(105.16)	(29.14)	(27.84)	(20.91)
Health insurance (self & spouse)	-221.99**	-117.02**	-108.38**	-88.68**
	(86.21)	(45.66)	(43.26)	(34.70)
Need to work on Friday	320.68***	325.41***	315.77***	279.73***
	(109.39)	(28.20)	(26.58)	(19.30)
Meals provided at workplace	14.46	83.82***	81.83***	73.21***
	(87.46)	(24.68)	(23.54)	(16.90)
Daycare provided at workplace	-45.10	81.83***	83.62***	75.38***
	(77.37)	(24.66)	(23.82)	(17.86)
P-value of equality of coefficients		0.000		
Wage at baseline (EGP)	2711	2517	2506	2520
Observations	4620	4620	4620	4620
Number of Individuals	660	660	660	660

Notes: The table shows estimates from the open ended elicitation when responses are winsorized at the 1, 2 and 5% of the bottom and top of the distribution of responses. Baseline wage corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Appendix E Payment card estimates

The following table presents estimates for the values of different job attributes among individuals assigned to the payment card format for different estimation methods. Column 1 replicates the results from Table 3, showing the maximum likelihood estimates of from the payment card elicitation including an interaction between each attribute and an indicator that takes value 1 when the distribution of options shown to respondents is shifted to the left. Columns 2 and 3 replicate the model of column 1 by OLS when the dependent variable is the value chosen by the individual and the midpoint between the wage chosen and the next lowest value.

Table D1: Comparison of estimates for Payment card format

	Interval (1)	Chosen value (2)	Midpoint (3)
Commute time (60 Minutes)	37.75	14.85	39.33
	(40.00)	(34.04)	(37.51)
Commute time (90 Minutes)	159.38***	117.25***	145.33***
	(45.20)	(35.00)	(40.77)
Commute time (120 Minutes)	67.63*	47.24	55.23
	(35.67)	(30.28)	(35.41)
Health insurance (self)	-145.45***	-137.95***	-142.72***
	(19.07)	(16.67)	(19.02)
Health insurance (self & spouse)	-91.24***	-77.06***	-89.52***
	(30.37)	(26.03)	(29.74)
Need to work on Friday	134.42***	116.15***	132.10***
	(17.02)	(14.58)	(17.60)
Meals provided at workplace	-18.12	-31.23**	-24.29
	(15.34)	(13.58)	(15.69)
Daycare provided at workplace	-10.59	-23.38	-10.34
	(17.20)	(15.20)	(17.36)
Lower card values	-255.79***	-273.37***	-256.15***
	(38.35)	(31.83)	(36.44)
60-Minute commute x Low card values	7.20	19.51	1.31
	(55.32)	(45.47)	(50.34)
90-Minute commute x Low card values	-63.95	-44.85	-64.02
	(59.19)	(45.40)	(52.42)
120-Minute commute x Low card values	73.21	54.12	60.79
	(55.08)	(42.07)	(49.42)
Health insurance (self) x Lower card values	85.19***	91.35***	88.16***
	(26.03)	(21.53)	(24.59)
Health insurance (self & spouse) x Lower card values	45.29	44.23	49.90
	(41.92)	(34.35)	(39.14)
Need to work on Friday x Lower card values	-21.01	-32.10*	-33.56
	(23.86)	(19.20)	(22.58)
Meals x Lower card values	86.78***	84.80***	83.81***
	(22.54)	(18.57)	(21.50)
Daycare x Lower card values	21.94	32.13	19.25
	(23.71)	(20.17)	(23.17)
Wage at baseline (30 min to work, no other attribute)	2238	2291	2215
P-value of no effect for interaction terms	0.000	0.000	0.000
Observations	4704	4704	4704
Number of Individuals	672	672	672

Notes: Column 1 shows the estimates for each attribute from the payment card elicitation using an interval regression. Column 2 uses the maxmimum value of the range, while column 3 uses the midpoint of the range. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Table D2: Comparison of estimates for the double-bound dichotomous choice format

	Pooled sample (1)	Pooled sample (2)	Wage changes of EGP150 (3)	Wage changes of EGP200 (4)	Wage changes of EGP300 (5)	Wage changes of EGP400 (6)	Wage changes of EGP500 (7)
Commute time (60 Minutes)	182.14***	184.15***	173.02	11.34	328.43***	291.59**	128.16
	(51.65)	(51.63)	(114.30)	(104.53)	(124.72)	(120.96)	(110.82)
Commute time (90 Minutes)	191.17***	190.25***	320.01**	363.11***	19.74	108.5	165.47
	(52.95)	(52.95)	(126.05)	(108.47)	(116.16)	(124.66)	(117.73)
Commute time (120 Minutes)	203.00***	203.27***	310.10**	155.93	234.83**	297.94**	40.66
	(53.35)	(53.36)	(124.71)	(107.19)	(117.40)	(139.88)	(111.58)
Health insurance (self)	-133.53***	-132.95***	-89.17	-142.15**	-85.52	-121.25	-214.11***
	(35.64)	(35.64)	(81.17)	(71.31)	(80.63)	(85.78)	(77.79)
Health insurance (self & spouse)	-232.40***	-231.73***	-148.42***	-280.34***	-186.19***	-205.91***	-320.42***
	(22.67)	(22.70)	(51.90)	(45.14)	(51.24)	(55.47)	(49.75)
Need to work on Friday	233.32***	233.71***	235.70***	167.84**	275.18***	247.72***	234.02***
	(34.33)	(34.32)	(77.79)	(67.93)	(78.96)	(82.33)	(74.99)
Meals provided at workplace	-4.3	-4.62	-20.35	-36.04	10.62	97.26	-71.43
	(33.34)	(33.32)	(75.37)	(65.67)	(75.21)	(81.48)	(73.40)
Daycare provided at workplace	59.22*	58.93*	58.67	8.69	47.04	103.47	72.4
	(33.48)	(33.47)	(75.52)	(66.36)	(75.31)	(81.15)	(74.01)
Wage changes of 200EGP		43.28					
		(33.81)					
Wage changes of 300EGP		62.08*					
		(34.51)					
Wage changes of 400EGP		8.37					
		(34.60)					
Wage changes of 500EGP		-28.31					
		(33.90)					
Reservation wage at baseline	2045	1985	1991	2061	2069	2055	2035
P-value of no difference by group		0.044					
Observations	4634	4634	889	1029	924	868	924
Number of Individuals	662	662	127	147	132	124	132

Notes: Column 1 shows the estimates for each attribute using the double bound method without controlling for the size of the random wage increase\decrease the individual was allocated to. Column 2 includes controls for each group. Columns 3-7 include the results for each group separately. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Appendix F Treatment effect heterogeneity in other elicitation formats

Table E1: Treatment effect heterogeneity by gender

	Open Ended			Pay Card			Double Bound		
	Men	Women	P-value of difference	Men	Women	P-value of difference	Men	Women	P-value of difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Commute time (60 Minutes)	171.44***	184.47*	0.92	77.36**	-24.56	0.07	183.19***	177.00**	0.96
	(64.12)	(103.19)		(31.05)	(46.78)		(62.45)	(90.02)	
Commute time (90 Minutes)	295.99***	260.77***	0.77	120.19***	157.33***	0.53	203.33***	195.85**	0.95
	(74.01)	(94.68)		(35.22)	(47.11)		(65.96)	(87.22)	
Commute time (120 Minutes)	448.24***	291.81***	0.23	70.96**	113.27**	0.49	178.89***	234.65**	0.63
	(74.78)	(105.69)		(28.99)	(53.67)		(63.47)	(95.36)	
Health insurance (self)	-120.72***	-138.64***	0.76	-113.37***	-82.66***	0.24	-95.34**	-204.23***	0.15
	(36.39)	(44.56)		(15.55)	(21.28)		(43.37)	(61.68)	
Health insurance (self & spouse)	-110.30**	-128.05	0.85	-78.02***	-44.94	0.44	-246.32***	-201.49***	0.35
	(54.40)	(77.81)		(23.50)	(35.91)		(27.37)	(39.32)	
Need to work on Friday	304.35***	379.30***	0.22	116.97***	133.08***	0.55	184.59***	331.78***	0.04
	(34.40)	(49.62)		(13.70)	(22.99)		(41.34)	(59.70)	
Meals provided at workplace	83.68***	82.73**	0.98	14.6	36.85*	0.36	-9.4	4.91	0.84
	(31.63)	(36.65)		(13.66)	(19.87)		(40.15)	(58.33)	
Daycare provided at workplace	79.32**	86.92**	0.87	-11.4	21.29	0.19	56.1	68.14	0.87
	(31.87)	(35.20)		(14.50)	(20.30)		(40.51)	(58.10)	
Lower card values				-228.89***	-147.39***	0.17			
				(33.87)	(49.44)				
Wage at baseline	2637	2200		2342	1988		2144	1839	
Observations	3332	1288		3290	1414		3199	1435	
Number of Individuals	476	184		470	202		457	205	

Notes: The table shows estimates of the value for each job characteristic by elicitation method used, for men and women separately. Open-ended estimates correspond to estimates of the winsorized sample at the top 1%. Payment card estimates correspond to the specification in which each attribute is interacted with a dummy that takes value 1 if the payment card shows a range of lower values. Baseline wage corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Table E2: Treatment effect heterogeneity by marital status

	Open Ended			Pay Card			Double Bound		
	Married	Single	P-value of difference	Married	Single	P-value of difference	Married	Single	P-value of difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Commute time (60 Minutes)	197.16	205.34***	0.95	-31.6	56.21	0.16	213.78*	162.83**	0.70
	(126.26)	(67.63)		(49.17)	(37.10)		(113.66)	(68.23)	
Commute time (90 Minutes)	432.16***	199.04***	0.14	45.3	149.54***	0.19	367.58***	144.62**	0.09
	(138.17)	(73.05)		(69.61)	(39.67)		(112.97)	(68.27)	
Commute time (120 Minutes)	462.54***	346.93***	0.42	139.46**	79.91**	0.42	-18.6	257.65***	0.03
	(118.90)	(79.61)		(65.24)	(33.41)		(110.35)	(69.31)	
Health insurance (self)	-126.79**	-130.20***	0.96	-127.34***	-100.67***	0.44	-182.41**	-131.74***	0.57
	(62.65)	(37.51)		(30.54)	(16.63)		(75.80)	(46.41)	
Health insurance (self & spouse)	-131.81	-110.34**	0.85	-80.19*	-86.34***	0.91	-364.06***	-218.08***	0.01
	(100.88)	(55.65)		(46.70)	(27.33)		(48.15)	(29.51)	
Need to work on Friday	460.84***	273.24***	0.00	118.60***	121.70***	0.93	185.96**	235.38***	0.56
	(48.86)	(36.42)		(29.28)	(15.34)		(72.48)	(44.65)	
Meals provided at workplace	179.11***	33.37	0.02	24.5	14.27	0.73	-14.4	-1.10	0.87
	(52.21)	(32.55)		(26.14)	(14.55)		(69.85)	(43.54)	
Daycare provided at workplace	174.10***	30.89	0.01	-46.02*	0.72	0.11	23.8	86.51**	0.45
	(47.08)	(32.53)		(24.92)	(15.55)		(70.11)	(43.84)	
Lower card values				-240.28***	-182.94***	0.45			
				(64.89)	(39.46)				
Wage at baseline	2565	2544		2366	2213		2252	2020	
Observations	1176	2625		1057	2758		1092	2695	
Number of Individuals	168	375		151	394		156	385	

Notes:The table shows estimates of the value for each job characteristic by elicitation method used, for married and single respondents separately. Open-ended estimates correspond to estimates of the winsorized sample at the top 1%. Payment card estimates correspond to the specification in which each attribute is interacted with a dummy that takes value 1 if the payment card shows a range of lower values. Baseline wage corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Table E3: Treatment effect heterogeneity by level of education

	Open Ended			Pay Card			Double Bound		
	High education (1)	Low education (2)	P-value of difference (3)	High education (4)	Low education (5)	P-value of difference (6)	High education (7)	Low education (8)	P-value of difference (9)
Commute time (60 Minutes)	296.97***	161.91**	0.30	55.0	19.55	0.57	118.3	190.28***	0.57
	(105.58)	(73.85)		(50.30)	(36.43)		(107.33)	(69.81)	
Commute time (90 Minutes)	264.18**	268.75***	0.97	95.60**	143.26***	0.49	321.29***	139.61*	0.13
	(104.74)	(83.09)		(48.28)	(49.33)		(96.29)	(72.73)	
Commute time (120 Minutes)	444.62***	332.13***	0.42	194.43***	32.77	0.01	361.47***	74.02	0.02
	(114.51)	(77.51)		(52.33)	(35.93)		(96.19)	(74.44)	
Health insurance (self)	-166.98***	-115.20***	0.45	-88.30***	-118.31***	0.32	-134.26**	-145.58***	0.89
	(55.10)	(40.47)		(23.23)	(18.91)		(66.27)	(49.22)	
Health insurance (self & spouse)	-176.75**	-98.45	0.45	-46.6	-106.17***	0.21	-240.55***	-259.60***	0.72
	(84.63)	(61.41)		(36.68)	(30.86)		(42.23)	(31.24)	
Need to work on Friday	388.50***	298.01***	0.15	131.77***	113.93***	0.53	337.97***	158.09***	0.02
	(49.89)	(37.10)		(22.48)	(17.27)		(64.19)	(47.12)	
Meals provided at workplace	70.55	83.47**	0.82	36.81*	3.83	0.21	26.3	-20.24	0.55
	(44.82)	(36.01)		(20.32)	(16.37)		(62.10)	(45.90)	
Daycare provided at workplace	34.24	99.63***	0.24	-2.1	-18.12	0.57	105.87*	49.36	0.47
	(43.73)	(34.48)		(23.03)	(15.84)		(62.24)	(46.28)	
Lower card values				-204.67***	-197.08***	0.91			
				(53.16)	(43.84)				
Wage at baseline	2701	2462		2253	2255		2058	2096	
Observations	1407	2394		1533	2282		1323	2464	
Number of Individuals	201	342		219	326		189	352	

Notes: The table shows estimates of the value for each job characteristic by elicitation method used, for respondents with tertiary education ("High education") and high school or less ("Low education"), separately. Open-ended estimates correspond to estimates of the winsorized sample at the top 1%. Payment card estimates correspond to the specification in which each attribute is interacted with a dummy that takes value 1 if the payment card shows a range of lower values. Baseline wage corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Table E4: Treatment effect heterogeneity by time searching for a job

	Open Ended			Pay Card			Double Bound		
	Long-term unemployed (1)	Short-term unemployed (2)	P-value of difference (3)	Long-term unemployed (4)	Short-term unemployed (5)	P-value of difference (6)	Long-term unemployed (7)	Short-term unemployed (8)	P-value of difference (9)
Commute time (60 Minutes)	59.45	190.46***	0.40	38.0	67.60*	0.78	64.8	226.39***	0.26
	(138.24)	(69.13)		(98.18)	(35.38)		(129.41)	(62.19)	
Commute time (90 Minutes)	258.60	284.78***	0.89	201.84*	165.42***	0.74	70.0	242.52***	0.29
	(172.09)	(68.50)		(103.58)	(35.05)		(151.97)	(63.11)	
Commute time (120 Minutes)	391.24***	362.91***	0.86	106.6	79.26**	0.73	203.42*	217.02***	0.92
	(144.89)	(79.09)		(70.98)	(31.42)		(122.67)	(66.86)	
Health insurance (self)	-190.56**	-90.21***	0.26	-104.08***	-87.97***	0.71	-58.7	-117.96***	0.55
	(82.65)	(32.92)		(39.76)	(15.49)		(90.22)	(43.07)	
Health insurance (self & spouse)	-119.90	-86.88	0.81	-118.60*	-79.46***	0.55	-57.5	-225.86***	0.01
	(126.41)	(53.51)		(60.75)	(25.42)		(57.23)	(27.40)	
Need to work on Friday	356.61***	300.17***	0.48	184.54***	136.50***	0.21	139.1	292.64***	0.11
	(73.13)	(32.38)		(35.90)	(14.53)		(85.87)	(41.86)	
Meals provided at workplace	51.46	63.13**	0.86	72.61**	14.52	0.11	-52.2	6.12	0.53
	(60.74)	(27.06)		(34.52)	(12.28)		(84.72)	(40.20)	
Daycare provided at workplace	71.28	38.98	0.62	45.4	-11.37	0.13	-0.1	49.64	0.60
	(59.14)	(26.59)		(34.61)	(13.22)		(84.32)	(40.26)	
Lower card values				-219.16**	-266.61***	0.64			
				(94.37)	(36.56)				
Reservation wage at baseline	2609	2538		2307	2247		2063	2054	
Observations	840	2996		616	3178		707	3031	
Number of Individuals	120	428		88	454		101	433	

Notes: The table shows estimates of the value for each job characteristic by elicitation method used, for individuals who have spent more or less time searching for a job than the average respondent, respectively. Open-ended estimates correspond to estimates of the winsorized sample at the top 1%. Payment card estimates correspond to the specification in which each attribute is interacted with a dummy that takes value 1 if the payment card shows a range of lower values. Baseline wage corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1

Appendix G Treatment effect heterogeneity by whether respondent has dependents

	Pooled sample			Men			Women		
	Dependents	No dependents	P-value of difference	Dependents	No dependents	P-value of difference	Dependents	No dependents	P-value of difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Commute time (60 Minutes)	48.2	74.82***	0.51	23.5	73.09***	0.22	85.9	104.34**	0.82
	(34.08)	(21.68)		(31.55)	(24.91)		(69.20)	(46.26)	
Commute time (90 Minutes)	137.53***	163.61***	0.67	93.32**	170.16***	0.14	245.27***	170.82**	0.45
	(41.72)	(39.63)		(39.39)	(34.00)		(76.63)	(67.03)	
Commute time (120 Minutes)	277.87***	286.88***	0.91	188.99***	236.25***	0.29	358.45***	417.23***	0.66
	(71.45)	(32.59)		(34.65)	(29.23)		(95.53)	(98.16)	
Health insurance (self)	-130.56***	-95.49***	0.31	-137.97***	-119.37***	0.63	-59.3	-43.4	0.80
	(26.36)	(22.00)		(29.20)	(24.63)		(47.72)	(41.80)	
Health insurance (self & spouse)	-234.79***	-169.34***	0.07	-262.86***	-174.29***	0.03	-135.60***	-158.96***	0.73
	(27.74)	(22.76)		(33.02)	(25.20)		(51.32)	(44.48)	
Need to work on Friday	122.17***	135.77***	0.60	115.54***	110.76***	0.87	149.28***	222.83***	0.18
	(18.66)	(18.48)		(20.62)	(20.17)		(37.56)	(41.56)	
Meals provided at workplace	-102.39***	-88.57***	0.55	-97.83***	-104.46***	0.80	-111.66***	-69.26**	0.36
	(17.59)	(15.37)		(19.40)	(18.44)		(32.46)	(34.58)	
Daycare provided at workplace	-84.90***	-28.83**	0.02	-33.86**	-29.41*	0.85	-195.53***	-35.4	0.00
	(18.75)	(14.58)		(17.20)	(16.31)		(43.89)	(33.52)	
Wage at baseline	2038	1835		2124	1956		1771	1486	
Observations	11025	13425		7755	9540		3270	3885	
Number of Individuals	735	895		517	636		218	259	

Notes:The table shows the discrete choice experiment estimates of the value for each job characteristic for respondents with and without dependents separately, as well as the p-value of the difference in valuation for each attribute between these two groups. Baseline wage corresponds to average salary when the job is 30 minutes away from the respondent's home and no other attribute is included. The number of observations corresponds to the number of individual-choice pairs. Standard errors clustered at the individual level between parenthesis. *** p<0.01, ** p<0.05, *p<0.1