Measuring Reservation Wages: Comparing Methods to Estimate Valuations of Job Attributes

Brian Feld[*]   AbdelRahman Nagy[†]   Adam Osman[‡]

May 7, 2020

Abstract

Reservation wages play a fundamental role in how economists think about the labor market. They are usually estimated indirectly using observational data and are often thought of unidimensionally - focusing primarily on the minimum monetary value need to take a job without taking into account the bundle of characteristics associated with a job. We run an experiment at a job matching center in which we test four different methods for estimating an individual's reservation wage. 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 women in our sample are more sensitive to longer 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.

1 Introduction

To attract workers, firms include nonwage amenities in their compensation packages (Oyer and Schaefer, 2005; Oyer, 2008). If workers have a higher valuation for those attributes than the employers' cost of providing them there could be an overall improvement of welfare and efficiency in the labor market. However, it is not entirely clear what is the most appropriate way of estimating

---

[*]Department of Economics, University of Illinois at Urbana-Champaign. bhfeld2@illinois.edu

[†]J-PAL. anagy@povertyactionlab.org

[‡]Department of Economics, University of Illinois at Urbana-Champaign. aosman@illinois.edu

job seeker valuation of non-wage job attributes. Economists have traditionally relied on revealed preference approaches in non-experimental settings, based on the hypothesis that if two jobs are similar except for the presence of a non-wage amenity, the difference in wage offered between these jobs should reflect the value assigned to that attribute (Rosen, 1986). Despite progress made by the availability of longitudinal data on workers who switch jobs and/or firms (Lavetti, 2018; Sorkin, 2018), the results obtained using these methods tend to be biased because frictions in the labor market results in utility differences across jobs, and also because researchers do not typically observe the entire choice set of each individual.[1]

In this paper, we instead turn to a series of stated preference approaches to estimate willingness to pay for several job attributes among a group of job seekers in Egypt. As opposed to revealed preference methods, stated preference methods directly ask individuals about the value they assign to certain attributes and has been used extensively in environmental economics to price non-market goods.

We work with an NGO that helps match job seekers with employers. When the job seekers apply for assistance with their job search we invite them to fill out a form that attempts to elicit their preferences over six different non-wage attributes including commute times, health insurance, and the need to work on weekends. The literature has used four main methods to estimate the value placed on attributes. This includes open-ended questions, the "pay-card" method, a dichotomous choice method, and more recently discrete choice experiments (DCE). However, previous research has shown that each method can yield different results (Boxall, Adamowicz, Swait, Williams, and Louviere, 1996; Adamowicz, Boxall, Williams, and Louviere, 1998), and there is no clear consensus on which is preferred. We randomize which elicitation method job seekers use allowing us to compare the estimates produced from the different methods.

We find large difference across elicitation methods in the value assigned to the job attributes we consider. For example, while individuals assigned to open-ended questions (where they are asked to report the minimum salary for which they would accept a job with the given characteristics) are willing to give up 11% of their wage if the job provides them with health insurance for them, those selected to the double-bound dichotomous choice format (in which respondents are given take-it-or-

---

[1]A crucial assumption of Rosen's theory is that the labor market is competitive, so in equilibrium utility is equalized across jobs.

leave-it job offers with different attributes and salaries) report a willingness to pay of 6.5% of the wage they would take for the same job without health insurance.

We also find that some of these elicitation methods present shortcomings that should be taken into account when carrying out these surveys. First, open-ended questions (the most commonly used elicitation format in household and labor force surveys) are sensitive to the presence of outliers, producing very noisy estimates of attribute values. Even after we account for extremely high asking salaries by winsorizing responses, we observe that estimates for certain attributes have the opposite sign that would be expected by economic theory. This suggests that estimates obtained with this approach should be taken with caution, and researchers should avoid using it despite its apparent simplicity.

Second, responses to the payment card elicitation format (where respondents are given a number of options from where to choose their reservation wage for a given job) suffers from "anchoring" behavior, whereby both the average reservation wage and the value assigned to certain attributes depends on the minimum and maximum values shown to respondents, even if the middle values and the increments are the same across sets of options. Moreover, we find similar issues with the sign of some willingness to pay estimates to those observed with the open-ended format.

Estimates using double-bound dichotomous choice questions and a discrete choice experiment (DCE) are precise and have the correct sign. However, the magnitudes observed in the former are much larger than those of the latter, and estimates from the double-bound dichotomous choice for distance to work are of the same magnitude regardless of the travel time, while estimated compensation from the DCE is increasing in travel time, as would be expected.

Besides comparing how useful different methods are to elicit job seekers' willingness to pay for work attributes, it is important to understand how these valuations differ across job seekers. While the existing literature has so far concentrated mostly on gender differences in preferences for job flexibility (Mas and Pallais, 2017), we take advantage of our rich data on job seeker characteristics to explore differences in the value assigned to job attributes by gender, marital status, education and unemployment spell. The results from the DCE suggest that women require higher compensation than men for a job that is further away from their homes, as well as if the job requires them to work on weekends. On the other hand, while women value more the provision of daycare at the workplace, they value health insurance less than men. Similarly, we find that married individuals

value more health insurance and daycare provision than respondents who are single.

This paper contributes to the study of how unemployed individuals set their reservation wages (Caliendo, Tatsiramos, and Uhlendorff, 2013; Krueger and Mueller, 2016; DellaVigna, Lindner, Reizer, and Schmieder, 2017), and in particular how these reservation wages vary with the characteristics of the job, particularly its flexibility in terms of schedule and work location (Mas and Pallais, 2017; He, Neumark, and Weng, 2019). While previous papers have estimated individuals' willingness to pay for other amenities such as fringe benefits (Eriksson and Kristensen, 2014; Wiswall and Zafar, 2017; Maestas, Mullen, Powell, Von Wachter, and Wenger, 2018), to our knowledge this is the first paper that focuses on actual job seekers.

Also, by comparing estimates resulting from different elicitation methods instead of relying only on a discrete choice experiment, our paper makes a contribution 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 find differences across elicitation formats (see for example Brown, Champ, Bishop, and McCollum, 1996; Welsh and Poe, 1998; Cameron, Poe, Ethier, and Schulze, 2002) or biases arising from some of these formats (Rowe, Schulze, and Breffle, 1996) in the case of non-market or public goods.

Even if stated preference methods could suffer from hypothetical bias, 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 for these attributes. The fact that we find large differences across elicitation methods suggests that results obtained from stated preference methods only should be taken with caution, and more research should be devoted at validating stated preference approaches with revealed preference methods. Although this has been done in other contexts (Brown et al., 1996), comparisons of WTP for non-wage job attributes are still lacking. Maestas et al. (2018) make an attempt to do this, although they study whether valuations for amenities obtained from a choice experiment correlate with the actual amenities that individuals have in their jobs.

The rest of the paper is structured as follows: section 2 describes the experimental design and details all the elicitation formats we use, along with the method we use in each case to estimate

4

the value assigned to each job characteristic. 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. Finally, section 5 concludes with a discussion of the implications of our results and suggestions for future research.

2   Data and Elicitation Methods

We collected data about job seekers' 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 blue collar. They also require firms to include social and medical insurance and to pay above the minimum wage for all the vacancies they help filling.

NEP would advertise their (free) services widely and job seekers would walk into one of their job matching centers to apply for support. When the job seeker approached NEP to register, the employment officer would encourage the job seeker to fill out our survey so that NEP could learn more about the 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 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. Table 1 shows the values that each of these attributes could take.

We fielded our survey between August 2018 and March 2019. During this time, 3,294 individuals signed up with NEP to receive their services. Among those who registered in the main office in Cairo, 1,637 agreed to fill our survey. In addition, 359 individuals who did not meet NEP's requirements to sign up completed our questionnaire, so in total 1,996 job seekers filled out the survey during that time.

Panel A of Table 2 shows summary statistics for the sample who completed our survey. Indi-

viduals in our sample are relatively young, predominantly male and single. The average job seeker has completed high school education 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 goes in line with recent studies that find that job seekers face high job search costs (Abebe, Caria, and Ortiz-Ospina, 2019).

In Panel B of Table 2 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.

Finally, Panel C in Table 2 reports the demographic characteristics and job search behavior for unemployed individuals in the 2017 Harmonized Labor Force Survey (HLFS, OAMDI, 2019). Compared to unemployed individuals in the 2017 HLFS, male respondents to our survey are older, but female respondents are younger. 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 heterogeniety in responses by subgroup in section 4 below.

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 with the same job descriptions across elicitation methods so the answers are not affected by how the jobs were described. Appendix A shows the questions asked to each participant. In addition, we 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 is 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 weekends, 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 as an 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. Also, these questions 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, 40% of all answers are above the highest value specified in the close-ended method used, and 98% of the answers are multiples of 100 despite individuals being able to give any integer amount as an answer.

With the exception of the discrete choice experiment that we implemented, all respondents within a treatment arm observed the same job descriptions and in the same order. Each job offered differed from the baseline offer (the first one shown) in only one attribute in order to make the task easier for respondents. However, to estimate if there is an interaction effect between certain amenities, within each elicitation method we randomly assigned individuals into two different set of offers: in one set the baseline attributes does not include health insurance, while the second set has health insurance for the respondent and her/his spouse as the default.

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.

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 et al., 1996). In order to test if there is any bias stemming from the range of values presented, within this elicitation format, we randmoly assigned respondents to one of two different lists of possible salaries: one ranging from 1000 to EGP 2200 and another ranging from EGP 1400 to EGP 2600, in both cases with EGP 200 increments.

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.

2.1.3 Double-bound Dichotomous Choice

The dichotomous choice method (also known as 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 take-it-or-leave-it series of offers (one for each job described) of the type job seekers usually face. 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 increase efficiency.

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. 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' WTP 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 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.

3   Results

Our main results are presented in Table 3, where in columns 1 to 6 we present the estimates of each job attribute for every elicitation method. In addition to this, column 7 shows estimates for a random sample of one third of the DCE respondents, in order to use a sample size similar to the one we had for each of the other elicitation formats to make the comparisons of each method's precision equitable.

The first thing to notice is that estimates using the open-ended questions (column 1) are imprecise compared to those of other elicitation methods despite having approximately the same number

of observations. Only four attributes are estimated to have values that are statistically different from zero: traveling 2 hours to work (for which individuals require EGP 303 as compensation, equivalent to 11.2% of the baseline wage), the provision of health insurance (for which they are willing to give up EGP 320 and 260 depending on whether only the worker or the worker and their spouse are covered, respectively), and the requirement to work on weekends (which requires an additional compensation of EGP 320).

One reason why these estimates are imprecise is because there is no upper bound on the wage that respondents can report, so estimates are sensitive to the presence of outliers (Carson and Hanemann, 2005). Thus, in column 2 we present the results of the estimation when responses are winsorized at the top 1%. Although estimates are still generally larger in magnitude than those from other elicitation methods, confidence intervals are smaller and all estimates are statistically different from zero. In Appendix Table B1 we present the results of winsorizing the answers at different levels, showing that estimates are robust to these changes.

While winsorizing improves efficiency, the WTP estimates for certain attributes present the opposite sign that would be predicted from a theoretical standpoint. In particular, the results from column 2 imply that job seekers would require a positive monetary compensation to take a job that provides on-site meals or daycare.

Column 3 reports the estimates when using the payment card method. In that case a job that is 90 minutes away from home requires an additional EGP 123 (5.5%) more than one that is just 30 minutes away, while a 120-minute commute is priced at EGP 100 per month. Once again, these results are not only at odds with the theory of compensating differentials, but also with recent empirical findings (Le Barbanchon, Rathelot, and Roulet, 2019). Compared to the estimates from open-ended questions the value of having to work on weekends is lower, with the average compensation being EGP 124 (5.5% with respect to the baseline wage). On the other hand, the willingness to pay for health insurance is lower, at EGP 109 (4.9% of the average baseline reservation wage) and EGP 78 (3.5%) if the policy covers both the worker and their spouse. The fact that WTP for the latter is lower than the former (or even the fact that we cannot reject the hypothesis that they are statistically equal) also contradicts theoretical predictions.

Although more precise than those obtained from the open-ended format, payment card estimates are not robust to the range of values shown to respondents. In column 4, we estimated a model

including an indicator that takes value 1 when the payment card shows "low" values (EGP 1000 to EGP 2200 in EGP 200 intervals) and 0 if the values are "high" (EGP 1400 to EGP 2600 in EGP 200 intervals), as well as interactions between this indicator and all the attributes. Estimates for certain attributes (such as commute time and health insurance) are different once we account for the different options shown to respondents.

Moreover, in Table C1 we present estimates for the payment card format using the full model including all the interaction terms between each attribute and the "low values" indicator. Even though the values in the middle are common to both payment cards used, 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.

Estimates using a double-bound dichotomous choice format (column 5) suggest that the average compensation demanded by job seekers if their job requires them to work certain weekends is EGP 232 (11.3% with respect to the baseline wage). In addition, compared to a job that is 30 minutes away from their home, respondents require a compensation of EGP 180, EGP 190 and EGP 203 for a job that is 60, 90 and 120 minutes away from home, respectively. However, we cannot reject the null hypothesis that these amounts are statistically identical, once again calling into question the reliability of this method to estimate job attributes value. On the other hand, job seekers are willing to give up on average EGP 141 of their salary if the job includes health insurance for themselves, and EGP 255 if it includes health insurance for them and their spouse. Finally, valuation for daycare provided at workplace is marginally different from zero but the sign is positive, which is contrary to what we would expect of an amenity.

Lastly, in columns 6 and 7 we present the results of the discrete choice experiment with the full sample of respondents and a random subsample of one third of respondents, respectively. The results from these two samples are similar (we cannot reject the hypothesis that estimates are statistically equal across samples for any job characteristic), precisely estimated, and consistent with theoretical predictions.

According to the estimates obtained in the full sample, individuals are willing to take a job that is 60 instead of 30 minutes away from their home in exchange for a EGP 86 (or 4.6%) higher

pay. Expected compensation for a job that is 90 and 120 minutes away from home stand at EGP 180 (9.6%) and EGP 296 (15.8%) respectively, suggesting that marginal disutility of travel time is increasing. In addition, respondents require an average compensation of EGP 147 (7.8%) for having to work some weekends each month. On the other hand, respondents are willing to give up EGP 104 (5.5%) of their salary if their job includes health insurance for themselves, and EGP 200 (10.6%) if health insurance also covers their spouse. If their workplace provides them with meals they are willing to take a EGP 102 (5.4%) lower salary, while having access to daycare at the workplace is priced at EGP 50 (2.6%).

Taking stock of the results presented so far, it is clear that estimates of workers preferences (and in particular, their valuation) for any set of job characteristics is quite sensitive to the elicitation method used. Moreover, some of these elicitation methods (such as the open-ended and payment card questions) are frequently used in labor force surveys, even though in our study they yield the most imprecise estimates, are sensitive to the range of values given to respondents, and yield results that seem to contradict theoretical predictions, with individuals requiring a wage premium to receive an amenity.

Ideally, a comparison with estimates obtained experimentally through a revealed-preference method should be carried out in order to determine whether any of these (or other) elicitation methods can be confidently used. Unfortunately to our knowledge all current studies use only one of these approaches, and those that intend to make this comparison are limited to comparing a stated-preference approach to the characteristics of the worker's current employment (Maestas et al., 2018).

An additional source of concern is whether responses depend on the baseline scenario shown to respondents, for a given set of characteristics. We test this by changing the baseline scenario shown to respondents in all but the discrete choice 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

13

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 4. The indicator for the order in which attributes appear are not statistically different from zero, suggesting that the order does not alter the wage choices of responses. Moreover, interactions between this treatment dummy and health insurance coverage are for the most part also indistinguishable from zero. The only exception is the interaction between the treatment dummy and the inclusion of health insurance for the worker and her spouse in the double-bound dichotomous choice elicitation format, which is nevertheless only marginally significant.

4   Treatment effect heterogeneity

In the previous section we showed that estimates vary substantially depending on the elicitation method used. Here, we also study whether individuals with different observable characteristics have different valuations for these non-wage job attributes conditional on the elicitation method used. We identified four characteristics that might influence individuals' valuation for some or all of the attributes used in our experiment: gender, marital status (whether the respondent is married or not), level of education (whether the person has higher education) and amount of time spent looking for a job (more or less than the average unemployment spell length in our sample of 9.8 months).

4.1   Gender differences in attribute valuations

Previous studies have shown that men and women have different preferences for attributes such as commute time (Le Barbanchon et al., 2019) and flexibility (Mas and Pallais, 2017). Our study includes attributes that may be valued differently by men and women, such as distance from home, the requirement to work on weekends, and the availability of in-site daycare. Therefore, in this section we study whether the estimates shown in column 6 of Table 3 for the pooled sample hide differences across gender. Table 5 presents the estimates of attribute valuations from the discrete choice experiment for men and women separately. Approximately 2.4 men answered our survey for each woman who responded, so confidence intervals for women tend to be larger.

14

The results from the DCE suggest that men and women have different willingness to pay for most of the attributes we included in our survey. First, women require almost twice as much compensation than men to accept jobs that are further away from their homes, as well as 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. In contrast to estimates for other characteristics, men have a higher willingness to pay for health insurance, although this difference is only marginally significant. Finally, men also have a 30% higher baseline wage than women.

The results of this exercise using the other elicitation methods is presented in Table D1. Qualitative results are similar although they are not always consistent due both to the smaller sample size and the issues associated with each elicitation method pointed out in section 3.

4.2 Heterogeneity by marital status

Individuals may value job characteristics differently based on their family background. For example, He et al. (2019) finds that married job seekers (irrespective of gender) are more attracted to jobs with flexible work arrangements than unmarried ones. Similarly, certain characteristics included in our study may be valued differently by marital status, such as health insurance coverage. In columns 1 and 2 of Table 6 we show the results separately between married and single (which includes divorced and widow) individuals regardless of gender. In columns 4 and 5 we restrict our sample to men and columns 7 and 8 show the differences between married and unmarried women only. Because marital status information was obtained from NEP's records and we were not able to match all our survey respondents to their own database, sample sizes are smaller. This means that even though point estimates can differ by hundreds of pounds, in some cases we do not have enough power to detect a statistically significant difference, as is the case with results from the payment card responses. However, we are still able to observe differences by marital status for other elicitation methods in some characteristics.

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 expected since in Egypt men are predominantly the breadwinner, so women's spouses may

already have health insurance coverage.

In addition to this, married respondents have a higher willingness to pay for in-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 E.

Finally, both men and women have a 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.

4.3   Heterogeneity by level of education

While previous studies using stated preference approaches have focused on heterogeneity in the valuation of job attributes based on gender or marital status, we can use the data collected from job seekers to study other dimensions over which WTP could differ. In particular, we look here at differences by level of education as a proxy for skill.

A stylized fact in the labor market is that jobs that have higher wages tend to also have better amenities. 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.

Similar to what happens when we split the sample by marital status, sample sizes are small when we condition on level of education, and we are not able to find many differences in how individuals value the job attributes we analyze. The only attributes for which we do find a difference in valuation are distance to work and the need to work on weekends. When we further split the sample by gender, we observe that the higher compensation required by those with high education is entirely driven by men. On the other hand, highly-educated women have a significantly higher willingness to pay for health insurance than those with low levels of education, something that is not observed in the pooled sample.

In all cases, individuals with high education have higher valuation, confirming our hypothesis that individuals with higher skills also posit a higher value to non-wage amenities. However, it should be noted that baseline wages are similar across the two groups of job seekers.

4.4   Heterogeneity by time on job search

We conclude our analysis by looking at whether the value assigned at the job characteristics vary by the time the person had spent looking for a job when they filled our survey. While we cannot give a causal interpretation to any differences that we might find, exploring this dimension of heterogeneity can help us identify potential reasons why so many people in Egypt suffer from long unemployment spells. Here, we classify them between long and short-term unemployed based on the average search spell in our sample (which is 9.8 months), although we should note that we cannot be sure that all individuals looking for a job are actually unemployed.

Table 8 presents the results. We find few differences in the valuation of attributes across these groups, which can partially explain the reason why the long-term unemployed have difficulty finding a job. Moreover, the few amenities for which we do find differences (such as the willingness to pay for health insurance), those with longer unemployment spells have a lower willingness to give up some of their wage.

Even though one would expect lower valuations of job characteristics by individuals who have been looking for a job for a longer period of time, it is important to note that this group constitutes a selected sample. Indeed, individuals may be unemployed for a long time as a consequence of the high value they assign to non-wage characteristics. A longitudinal study of attribute valuation would shed light on this issue.

5   Conclusion

Non-wage job amenities constitute a considerable part of worker's compensation in many jobs. If workers value these amenities more than what it cost to provide them, these amenities are a way for firms to attract workers and reduce the cost of a vacancy. However, estimating the value that workers assign to job characteristics has proven challenging.

The first attempts to estimate workers' willingness to pay for job amenities have used a revealed

17

preference approach relying on observational data. Because this approach fails to control for the worker's entire choice set of jobs, economists have recently turned to stated preference methods that elicit willingness to pay in hypothetical scenarios controlled by the researcher. Nevertheless, it is unclear how estimates derived from different elicitation methods compare with each other nor why one should be preferred over others.

In this paper, we aim to fill this gap by comparing estimates from different methods to value the same non-wage characteristics among job seekers in Egypt. Respondents were randomly assigned to one of three elicitation formats to estimate their willingness to pay/accept compensation for five different job attributes: distance to work, health insurance coverage, weekend shifts, and the provision of daycare and meals at the workplace. In addition to this, all respondents were asked to complete a discrete choice experiment (the most common approach used in recent years among labor economists) consisting of several pairwise comparisons of job offers that varied across these five characteristics.

We find large differences in the estimates obtained with the different elicitation methods, both in nominal terms and with respect to a "baseline wage" that corresponds to a job with no amenities and 30 minutes away from the worker's home. For example, the estimate of willingness to accept compensation for a job that requires an employee to work on weekends among individuals assigned to the double-bound dichotomous choice format is EGP 233, or 11.4% of the baseline wage, while the estimate of willingness to accept compensation based on the discrete choice experiment is EGP 146, or 7.8% of the baseline salary.

Because of these sizable differences, it is important to have a better understanding of which elicitation methods are able to better approximate true valuations. Hence, it is important that future research focuses on validating estimates obtained from stated preference methods with those from revealed preference approaches in controlled environments.

From our results it seems that certain elicitation formats should be avoided. For example, estimates obtained from open-ended questions (which are popular in household or labor force surveys) are sensitive to the presence of outliers. Even after taking this factor into account, we observe that estimates for certain amenities have the opposite sign from what theory predicts. This may be indicative of either issues related to incentive compatibility of the method or lack of understanding by respondents.

18

In addition to this, estimates obtained with the payment card format are not robust to the range of options shown to respondents. We observe not only differences in baseline wages but also changes in the value assigned to certain attributes depending on the values shown at the bottom or the top of the distribution of wages offered.

Besides differences in valuations by elicitation method, we also observe heterogeneity in willingness to pay within method across different demographics, especially with respect to gender nd marital status. These differences could be of interest for firms at the time of deciding compensation packages for different occupations and/or individuals, and it might help explain part of the wage disparities found in non-experimental data.

Interestingly, we also find few differences in attribute valuation across length of job search spell. While the reason for this may be that individuals who have spent a long time looking for a job are a selected sample among job seekers, it also suggests that interventions aimed at "correcting" the expectations of these individuals could help them reduce the time it takes for them to find a job.

References

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

Adamowicz, W., Boxall, P., Williams, M., & Louviere, J. (1998). Stated preference approaches for measuring passive use values: Choice experiments and contingent valuation. *American journal of agricultural economics*, *80*(1), 64–75.

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.*

Boxall, P. C., Adamowicz, W. L., Swait, J., Williams, M., & Louviere, J. (1996). A comparison of stated preference methods for environmental valuation. *Ecological economics*, *18*(3), 243–253.

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.

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.

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.

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. (2019). *Do workers value flexible jobs? a field experiment on compensating differentials*. National Bureau of Economic Research.

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. (2018). The estimation of compensating wage differentials: Lessons from the deadliest catch. *Journal of Business & Economic Statistics*, 1–18.

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.

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.*

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.

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.

Sorkin, I. (2018). Ranking firms using revealed preference. *The quarterly journal of economics, 133*(3), 1331–1393.

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

Elicitation questions > Open-ended questions

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?

-	+	.	1	2	3	⌫
∗	/	,	4	5	6	↵
(	)	=	7	8	9	
ENGLISH			∗	0	#	

Figure 2:   Example of payment card question asked to respondents

Elicitation questions > Payment card questions

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?

○ 1400 EGP
○ 1600 EGP
○ 1800 EGP
○ 2000 EGP
○ 2200 EGP
○ 2400 EGP
○ 2600 EGP
○ More than 2600 EGP

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

Elicitation questions > Double-bounded dichotomous choice questions

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.
Would you accept it if it paid 2400 for this job?

○ Yes
○ No

Figure 4: Example of discrete choice question asked to respondents

Elicitation questions > Discrete choice experiment questions

Suppose you are offered two job offers with the characteristics described below. Which, if any, would you accept?

Job offer A	Job offer B
Your salary would be EGP 1200 per month	Your salary would be EGP 1800 per month
You have to travel 30 minutes every day to get to work	You have to travel 120 minutes every day to get to work
You would not be provided with health insurance	You would be provided health insurance for yourself
You would be ask to work some Fridays every month	You would only work on weekdays
Meals will be provided at the workplace	No meals will be provided
Childcare is available on site	No childcare is available on site

○ Job offer A
○ Job offer B
○ None of the job offers

Table 1: Job characteristics and their levels

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

Note: This table 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.

Table 2: 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: NGO registrants	All			Men			Women		
Age	28.78	6.36	3294	28.33	6.56	1670	29.25	6.12	1624
Share male	0.51	0.50	3294						
Share married	0.46	0.50	3294	0.55	0.50	1670	0.37	0.48	1624
Number of dependents	1.12	1.29	3294	1.18	1.21	1670	1.07	1.37	1624
Years of education	11.84	4.71	3294	11.44	5.12	1670	12.25	4.22	1624

Panel C: 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

Note: 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 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 3: Results of different elicitation formats

	Open ended (1)	Open ended winsorized (2)	Pay Card (3)	Pay Card (4)	Double Bound (5)	Discrete choice experiment (6)	DCE (reduced sample) (7)
Commute Time (60 Minutes)	152.79	182.10***	39.36	37.75	182.14***	86.30***	110.60***
	(123.20)	(55.66)	(27.73)	(40.00)	(51.65)	(15.22)	(27.42)
Commute Time (90 Minutes)	148.58	274.02***	123.01***	159.38***	191.17***	180.20***	186.76***
	(105.51)	(59.98)	(29.51)	(45.20)	(52.95)	(20.15)	(36.91)
Commute Time (120 Minutes)	303.77***	406.20***	99.84***	67.63*	203.00***	295.87***	312.48***
	(107.82)	(63.12)	(26.95)	(35.67)	(53.35)	(22.26)	(41.48)
Health Insurance for Self	-301.43***	-166.15***	-104.55***	-145.45***	-133.53***	-104.06***	-121.93***
	(105.16)	(23.05)	(13.22)	(19.07)	(35.64)	(14.96)	(26.86)
Health Insurance for Self & Spouse	-221.99**	-196.12***	-69.57***	-91.24***	-232.40***	-199.83***	-219.73***
	(86.21)	(23.10)	(21.09)	(30.37)	(22.67)	(15.95)	(28.50)
Need to Work on Friday	320.68***	324.36***	124.06***	134.42***	233.32***	146.68***	128.38***
	(109.39)	(28.24)	(12.01)	(17.02)	(34.33)	(12.58)	(21.35)
Meals provided at workplace	14.46	82.53***	22.65**	-18.12	-4.27	-101.94***	-80.68***
	(87.46)	(24.85)	(11.32)	(15.34)	(33.34)	(10.77)	(18.01)
Daycare provided at workplace	-45.10	80.56***	-0.82	-10.59	59.22*	-49.51***	-53.25***
	(77.37)	(24.82)	(11.86)	(17.20)	(33.48)	(10.12)	(18.38)
Wage at baseline	2711	2515	2238	2238	2045	1877	1861
Observations	4620	4620	4704	4704	4634	29940	9975
Number of Individuals	660	660	672	672	662	1996	665

Note: 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. The estimates from column 3 where obtained in 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 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. 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 4: Sensitivity of Responses Based on Randomized First Question in Series

	Open Ended (1)	Pay Card (2)	Double Bound (3)
Health Insurance for Self × Treatment	-168.99	7.81	-95.13
	(283.99)	(17.38)	(75.30)
Health Insurance for Self & Spouse × Treatment	-103.56	-13.85	134.70*
	(317.11)	(19.41)	(74.02)
Health Insurance for Self	-219.08***	-102.33***	-125.16**
	(68.77)	(12.64)	(53.39)
Health Insurance for Self & Spouse	-176.97*	-59.01***	-373.30***
	(93.61)	(13.70)	(51.99)
Treatment	11.82	-23.07	-24.69
	(310.15)	(31.64)	(54.05)
Observations	1980	2016	1986
Number of Individuals	660	672	662

Note: 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 her spouse. 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

	Men	Women	P-value of difference
	(1)	(2)	(3)
Commute time (60 Minutes)	68.01***	127.27***	0.09
	(16.85)	(30.39)	
Commute time (90 Minutes)	154.94***	238.47***	0.07
	(21.89)	(41.17)	
Commute time (120 Minutes)	237.47***	423.04***	0.00
	(25.82)	(53.44)	
Health insurance (self)	-112.89***	-56.54**	0.08
	(16.93)	(27.81)	
Health insurance (self & spouse)	-210.51***	-148.24***	0.13
	(17.80)	(37.07)	
Need to work on Friday	113.07***	222.10***	0.01
	(12.82)	(39.11)	
Meals provided at workplace	-102.57***	-85.91***	0.47
	(11.99)	(19.49)	
Daycare provided at workplace	-33.53***	-87.12***	0.04
	(10.49)	(23.27)	
Wage at baseline	1984	1550	
Observations	21075	8865	
Number of Individuals	1405	591	

Note: The table shows the discrete choice experiment estimates of the value for each job characteristic for men and women separately, as well as the p-value of the difference in valuation for each attribute across gender. 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.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

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)	
Wage at baseline	2097	1847		2168	1962		1811	1525	
Observations	7140	17310		5115	12180		2025	5130	
Number of Individuals	476	1154		341	812		135	342	

Note: 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. 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

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

Note: 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. 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

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)	93.24*** (34.89)	78.48*** (19.89)	0.71	77.12* (39.55)	71.41*** (20.26)	0.90	107.9 (69.41)	128.70*** (45.70)	0.80
Commute time (90 Minutes)	201.98*** (44.09)	149.04*** (25.66)	0.30	148.92*** (55.05)	142.82*** (26.58)	0.92	319.45*** (123.85)	173.08*** (67.18)	0.32
Commute time (120 Minutes)	276.48*** (50.32)	263.45*** (25.84)	0.82	206.10*** (53.52)	221.40*** (25.25)	0.80	390.53*** (118.82)	439.87*** (111.34)	0.77
Health insurance (self)	-24.9 (33.07)	-115.28*** (18.21)	0.02	-65.49* (37.93)	-112.96*** (20.17)	0.27	171.5 (107.68)	-98.40*** (37.59)	0.02
Health insurance (self & spouse)	-134.38*** (35.82)	-207.49*** (19.61)	0.07	-142.79*** (41.72)	-207.95*** (21.61)	0.16	-91.9 (61.63)	-158.43*** (42.20)	0.37
Need to work on Friday	109.37*** (28.68)	139.74*** (15.23)	0.35	104.71*** (31.84)	107.53*** (15.45)	0.94	132.26** (57.48)	260.14*** (83.09)	0.20
Meals provided at workplace	-117.75*** (23.92)	-91.05*** (13.31)	0.33	-110.45*** (27.34)	-101.62*** (14.91)	0.78	-137.94*** (46.26)	-62.05** (24.61)	0.15
Daycare provided at workplace	-78.91*** (25.43)	-35.22*** (12.23)	0.12	-73.84*** (28.64)	-30.56** (12.59)	0.17	-69.5 (53.14)	-55.05* (31.21)	0.82
Wage at baseline	1844	1901		1955	2011		1585	1507	
Observations	5535	18855		3600	13515		1935	5340	
Number of Individuals	369	1257		240	901		129	356	

Note: 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 average respondent, as well as the p-value of the difference in valuation for each attribute across unemployment spell. 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

Appendix A   List of questions by elicitation method

Table A1:   Questions asked to survey participants to elicit their WTP for job attributes

---

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?

Note: The table 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.

Appendix B   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 top 1%, respectively. In turn, columns 3 and 4 show the results when responses are winsorized at the top 2% and 5%, respectively. We can reject at the 1% level the null hypothesis that the estimates are statistically equivalent across models.

Table B1: Estimates of Open-Ended elicitation with winsorized values

Cutoff	0%	1%	2%	5%
	(1)	(2)	(3)	(4)
Commute Time (60 Minutes)	152.21	182.10***	179.49***	175.10***
	(123.12)	(55.66)	(52.73)	(47.18)
Commute Time (90 Minutes)	148.60	274.02***	273.23***	257.70***
	(105.52)	(59.98)	(57.49)	(51.44)
Commute Time (120 Minutes)	303.10***	406.20***	377.94***	335.54***
	(107.54)	(63.12)	(57.84)	(49.59)
Health Insurance for Self	-320.87***	-166.15***	-158.03***	-138.08***
	(92.24)	(23.05)	(22.30)	(20.67)
Health Insurance for Self & Spouse	-260.87***	-196.12***	-188.97***	-168.32***
	(63.66)	(23.10)	(22.00)	(19.72)
Need to Work on Friday	320.27***	324.36***	314.59***	288.07***
	(109.26)	(28.24)	(26.69)	(23.51)
Meals provided at workplace	14.04	82.53***	80.34***	76.09***
	(87.25)	(24.85)	(23.80)	(21.65)
Daycare provided at workplace	-45.51	80.56***	82.13***	84.40***
	(77.17)	(24.82)	(24.07)	(22.36)
P-value of equality of coefficients		0.000		
Wage at baseline (EGP)	2711	2515	2503	2462
Observations	4620	4620	4620	4620
Number of Individuals	660	660	660	660

Note: The table shows estimates from the open ended elicitation when responses are winsorized at the 1, 2 and 5% of the top of the distribution. 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 C   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 specifications and estimation methods. Column 1 shows the maximum likelihood estimates of from the payment card elicitation without considering differences by the range of options shown to respondents. Column 2 shows maximum likelihood estimates 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 3 and 4 replicate the model of column 2 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 C1: Comparison of estimates for Payment card format

	Base model (1)	Full model (2)	Chosen value (3)	Midpoint (4)
Commute Time (60 Minutes)	39.29	37.76	14.80	39.23
	(27.72)	(40.00)	(34.05)	(37.52)
Commute time (60 Minutes)	39.36	37.75	14.85	39.33
	(27.73)	(40.00)	(34.04)	(37.51)
Commute time (90 Minutes)	123.01***	159.38***	117.25***	145.33***
	(29.51)	(45.20)	(35.00)	(40.77)
Commute time (120 Minutes)	99.84***	67.63*	47.24	55.23
	(26.95)	(35.67)	(30.28)	(35.41)
Health insurance (self)	-104.55***	-145.45***	-137.95***	-142.72***
	(13.22)	(19.07)	(16.67)	(19.02)
Health insurance (self & spouse)	-69.57***	-91.24***	-77.06***	-89.52***
	(21.09)	(30.37)	(26.03)	(29.74)
Need to work on Friday	124.06***	134.42***	116.15***	132.10***
	(12.01)	(17.02)	(14.58)	(17.60)
Meals provided at workplace	22.65**	-18.12	-31.23**	-24.29
	(11.32)	(15.34)	(13.58)	(15.69)
Daycare provided at workplace	-0.82	-10.59	-23.38	-10.34
	(11.86)	(17.20)	(15.20)	(17.36)
Lower card values	-209.70***	-255.79***	-273.37***	-256.15***
	(30.14)	(38.35)	(31.83)	(36.44)
60-Minute commute × Low card values		7.20	19.51	1.31
		(55.32)	(45.47)	(50.34)
90-Minute commute × Low card values		-63.95	-44.85	-64.02
		(59.19)	(45.40)	(52.42)
120-Minute commute × Low card values		73.21	54.12	60.79
		(55.08)	(42.07)	(49.42)
Health insurance (self) × Low card values		85.19***	91.35***	88.16***
		(26.03)	(21.53)	(24.59)
Health insurance (self & spouse) × Low card values		45.29	44.23	49.90
		(41.92)	(34.35)	(39.14)
Need to work on Friday × Low card values		-21.01	-32.10*	-33.56
		(23.86)	(19.20)	(22.58)
Meals × Low card values		86.78***	84.80***	83.81***
		(22.54)	(18.57)	(21.50)
Daycare × Low card values		21.94	32.13	19.25
		(23.71)	(20.17)	(23.17)
Wage at baseline	2238	2238	2291	2215
Observations	4704	4704	4704	4704
Number of Individuals	672	672	672	672

Note: Column 1 shows the maximum likelihood estimates of from the payment card elicitation without considering differences by the range of options shown to respondents. Column 2 shows maximum likelihood estimates 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 3 and 4 replicate the model of column 2 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. 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 D Treatment effect heterogeneity in other elicitation formats

Table D1: 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	

Note: 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 D2: 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	

Note: 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 D3: 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*** (105.58)	161.91** (73.85)	0.30	55.0 (50.30)	19.55 (36.43)	0.57	118.3 (107.33)	190.28*** (69.81)	0.57
Commute time (90 Minutes)	264.18** (104.74)	268.75*** (83.09)	0.97	95.60** (48.28)	143.26*** (49.33)	0.49	321.29*** (96.29)	139.61* (72.73)	0.13
Commute time (120 Minutes)	444.62*** (114.51)	332.13*** (77.51)	0.42	194.43*** (52.33)	32.77 (35.93)	0.01	361.47*** (96.19)	74.02 (74.44)	0.02
Health insurance (self)	-166.98*** (55.10)	-115.20*** (40.47)	0.45	-88.30*** (23.23)	-118.31*** (18.91)	0.32	-134.26** (66.27)	-145.58*** (49.22)	0.89
Health insurance (self & spouse)	-176.75** (84.63)	-98.45 (61.41)	0.45	-46.6 (36.68)	-106.17*** (30.86)	0.21	-240.55*** (42.23)	-259.60*** (31.24)	0.72
Need to work on Friday	388.50*** (49.89)	298.01*** (37.10)	0.15	131.77*** (22.48)	113.93*** (17.27)	0.53	337.97*** (64.19)	158.09*** (47.12)	0.02
Meals provided at workplace	70.55 (44.82)	83.47** (36.01)	0.82	36.81* (20.32)	3.83 (16.37)	0.21	26.3 (62.10)	-20.24 (45.90)	0.55
Daycare provided at workplace	34.24 (43.73)	99.63*** (34.48)	0.24	-2.1 (23.03)	-18.12 (15.84)	0.57	105.87* (62.24)	49.36 (46.28)	0.47
Lower card values				-204.67*** (53.16)	-197.08*** (43.84)	0.91			
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	

Note: 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 D4: 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)	129.71 (128.90)	171.27** (70.88)	0.78	-18.5 (85.86)	80.81** (36.07)	0.29	79.3 (115.44)	232.80*** (64.21)	0.25
Commute time (90 Minutes)	213.74 (145.04)	303.31*** (72.04)	0.58	186.69** (86.64)	167.70*** (36.02)	0.84	167.9 (137.87)	226.12*** (64.34)	0.70
Commute time (120 Minutes)	383.09*** (131.63)	363.19*** (81.37)	0.90	165.52** (70.28)	64.97** (31.52)	0.19	204.81* (110.66)	217.72*** (69.24)	0.92
Health insurance (self)	-162.97** (73.35)	-94.67*** (34.03)	0.40	-86.42** (35.97)	-91.75*** (15.76)	0.89	-69.8 (80.59)	-117.92*** (44.39)	0.60
Health insurance (self & spouse)	-109.17 (113.09)	-88.75 (55.27)	0.87	-100.62* (55.62)	-82.95*** (25.80)	0.77	-82.7 (51.31)	-227.88*** (28.21)	0.01
Need to work on Friday	376.85*** (66.17)	290.44*** (33.16)	0.24	187.29*** (33.39)	134.51*** (14.70)	0.15	184.27** (77.26)	286.83*** (43.07)	0.25
Meals provided at workplace	66.01 (54.49)	58.68** (27.95)	0.91	85.88*** (32.51)	9.97 (12.27)	0.03	-53.4 (75.53)	9.48 (41.44)	0.47
Daycare provided at workplace	70.85 (52.27)	37.52 (27.63)	0.57	27.2 (31.54)	-8.96 (13.46)	0.29	-0.1 (75.46)	52.11 (41.47)	0.55
Lower card values				-229.01*** (86.15)	-266.42*** (37.08)	0.69			
Wage at baseline	2567	2548		2295	2248		2045	2059	
Observations	980	2856		714	3080		882	2856	
Number of Individuals	140	408		102	440		126	408	

Note: 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 E 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	

Note: 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