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ABSTRACT

Preferences and the Puzzle of Female Labor Force Participation

Women's educational attainment has continuously increased across the Middle East, while fertility rates have declined substantially. Yet their labor force participation remains stubbornly low. To investigate this puzzle, I use a discrete choice experiment in Egypt that varies the gender composition of the work environment—a key but underexplored dimension. I find that men, who have final say over women's work decisions, demand 77% higher wages for their wives if the job is in a mixed-gender setting. Since few workplaces are all-female and men can veto women's employment, these findings help explain the persistently low female participation rate.

JEL Classification: J21, J29, J49

Keywords: labor supply, preferences toward job attributes, Middle East and North Africa

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1 Introduction

Women in the Middle East and North Africa (MENA) have garnered significant achievements in the last four decades: Average years of education for women aged 15 to 64 in the region has increased from about one year in 1970 to nearly eight years in 2015 (Figure 1a). In effect, in some MENA countries, women aged 20 to 30 are more educated than their male counterparts. In addition, fertility rates declined continuously between 1970 and 2000, from 6.5 to less than three births per woman (Figure 1b). Fertility rates in Bahrain, Iran, Kuwait, Qatar, Tunisia, and the United Arab Emirates are below the replacement rate of 2.1. Nevertheless, the female labor force participation (FLFP) rate has remained low and stagnant at about 20% (Figure 1c). For comparison, the average world FLFP rate is about 55%. Arguably, after the political instability and the problem of youth unemployment, this puzzle is the most important economic policy question in the region.

The puzzle, documented in a 2004 World Bank Report (World Bank, 2004), has received many explanations. Majbouri (2016*a*) describes that some of these explanations attribute the problem to demand-side factors, some to supply-side factors, and others to a combination of both. On the demand side, scholars argue that there is low demand for female labor in the Middle East because of social and cultural norms (Chamlou, Muzi and Ahmed, 2016; Moghadam, 2013), employer discrimination (Krafft, 2023; Yassin, 2013), wage disparity in the private sector (Said, 2014, 2015), the structure of the economy (Karshenas, Moghadam and Chamlou, 2016), lack of "appropriate" jobs for women (Nazier and Ramadan, 2016; Assaad et al., 2020; Assaad, 2014; Assaad, Hendy and Yassine, 2014; Assaad and El-Hamidi, 2000, 2009), and the existence of oil and gas rents in the economy (Ross, 2008; Majbouri, 2016*b*). On the supply side, the low supply is associated with social and cultural norms, particularly the male breadwinner paradigm (Moghadam, 2013), husbands' preferences and discrimination within the household (Assaad, Krafft and Selwaness, 2022; Majbouri, 2018), the existence of oil and gas rents (Majbouri, 2016*b*), women's personal preferences, and more (See also work such as Egel and Salehi-Isfahani, 2010; Esfahani and Shajari, 2012; Esfahani

and Bahramitash, 2010). However, the literature has largely documented theoretical relationships and correlations between these factors and labor supply. Causal evidence is rarely offered.

This study examines an important but overlooked hypothesis: discrimination on the supply side. Family laws or social norms in almost all countries in the region,[1] which are based on Sharia law, mandate that women seek permission from their male guardians (e.g., husband or father) to join the labor force. This means that husbands hold de facto veto power over their wives' decision to work, and can revoke their permission even after it was granted. If men's and women's preferences towards women's employment are aligned, this veto power will have a minimal impact on FLFP. However, if men not only differ in their preferences but also favor a more restrictive set of acceptable jobs, this uniquely MENA-region dynamic enforces men's preferences and can be a major constraint on FLFP. Hence, understanding these preferences can be essential to explaining the FLFP puzzle. Despite its significance, this topic has not been studied extensively, particularly in a causal framework.

While it may seem evident that, because of patriarchal norms, men in the MENA region would prefer their wives not to work outside the home, the best evidence available suggests otherwise. According to the 2013 Arab Barometer survey, 70-90% of men in most Arab countries agreed with the statement that "a married woman can work outside the home" (Figure 2a). Similar results were found in the 2016 survey (Figure 2b). These (surprisingly) large shares of men contradict such notions. However, one might argue that this number is potentially unreliable due to various survey collection biases, including social desirability bias. Therefore, a proper study of men's and women's preferences is necessary.

In this study, I employ discrete choice experiments (DCEs) to estimate men and women's preferences for three job attributes for women: 1) whether a job is part-time or full-time, 2)

[1]Family laws in Bahrain, Iran, Iraq, Jordan, Kuwait, Lebanon (for devout Muslims), Oman, Qatar, Syria, Saudi Arabia, Syria, United Arab Emirates, Yemen, and Egypt until recently, require women to seek their husbands' consent to work. Algeria, Morocco, Tunisia, and Turkey do not have such restrictions. Wherever laws are not crystal clear, social norms expect women to seek such permissions. For example, in Egypt such laws changed in 2022. Nevertheless, societal and cultural norms expect women to follow them.

whether it is in the private or government sector, and 3) whether it is in a mixed-gender or all-female work environment. The literature on the FLFP in the MENA region has frequently highlighted the significance of the first two job attributes, primarily based on where we find women employed according to available survey data (see, for example, Assaad, 2014; Assaad and Krafft, 2015*a*; Assaad et al., 2020). The third attribute, often overlooked in the literature, represents the key innovation of this study and is central to the hypothesis being tested. My initial hypothesis was that, although all attributes are important, men place significantly more importance on the gender composition of their wives' work environment than on other attributes. If men strongly prefer all-female environments for their wives, which are scarce and hard to find, this preference could explain the puzzle of low FLFP rates in the region.

To estimate preferences, I designed a questionnaire containing a series of DCEs and recruited a leading global survey vendor with a large web panel in Egypt and extensive experience in administering surveys in the country. The data were collected in September 2022. I describe the survey design and the data in Sections 2 and 3. First, I collect women's preferences for jobs they would choose for themselves. I then solicit their perceptions of their husbands' preferences for the same jobs. Similarly, I elicit men's preferences for jobs they choose for their wives and inquire about their perceptions of how other men would choose the same jobs for their wives.

The results of this study (discussed in Section 4) show that by a large margin, men care the most about the gender mix of their wives' work environment relative to the other two attributes. They strongly prefer an all-female work environment for their wives and demand 77% higher wages in mixed-gender environment. Women, however, do not care about the gender mix of the work environment. They also underestimate men's preference for this attribute. Men have a relatively accurate prediction of how much other men prefer an all-female work environment for their wives.

The most important attribute for women (and the second most important attribute

for men) is whether a job is full-time vs. part-time. Both women and men prefer full-time jobs and demand about 35% higher wages for part-time jobs (presumably because the total earnings of full-time jobs are higher). Controlling for these two attributes, there is no evidence that women care about whether a job is in the government or private sector. However, men have some preference for government sector jobs. I study the heterogeneity in these preferences by education, marital status, and whether female respondents or male respondents' wives work. Section 4 also discusses the implications of these results in resolving the puzzle of the low female labor force participation rates in Egypt and possibly the rest of MENA. The results may help devise better policies to address this issue. Section 5 concludes.

2 Research Design

Asking direct questions about preferences in surveys, particularly preferences towards women's employment, can be sensitive, particularly in the MENA region. Discrete Choice Experiments (DCEs) that elicit preferences indirectly are shown to be more accurate, particularly in these contexts. In this study, I devised a set of DCEs to map preferences towards job attributes. DCEs are used in marketing, transportation, and health economics to evaluate preferences and willingness to pay for various attributes of a product, transportation mode, environmental amenities, or healthcare service (Greene and Hensher, 2003; Xie, Liu and Or, 2023; Adamowicz, Louviere and Williams, 1994). In recent years, labor economists employed them to estimate compensating wage differentials (Mas and Pallais, 2017; Wiswall and Zafar, 2017).

I study three of the most important attributes of women's work outside the home: whether a job is 1) part-time vs. full-time, 2) in the private vs. government sector, and 3) in a mixed-gender vs. an all-female work environment. The extensive literature on the topic suggests the first two attributes, albeit primarily based on correlations. Studies have found a significant presence of women in the government sector, which led many to argue

that women prefer government-sector jobs (for example, Assaad, 2014; Assaad and Krafft, 2015*a*; Assaad et al., 2020). In addition, women's responsibilities at home in the MENA region have led many to argue that women prefer part-time jobs to full-time jobs (Assaad and Krafft, 2015*b*). The last attribute on the list, the gender composition of the work environment, represents the novel contribution of this study and is directly tied to its central hypothesis, which posits that the gender mix of the work environment is more important to men than the other two attributes.

In the choice experiment for this study, respondents are asked to pick their preferred job between two fictitious alternatives offered to them. The two jobs vary in one or two of the three attributes mentioned above. The following is a sample question asked of female respondents (as I describe later, the questions for men ask for which alternative they prefer for their wives):

"Which of the following jobs do you prefer for yourself? Note that there is no right or wrong answer; only think about your opinion.

1. A full-time job in the government sector in an all-female work environment that pays W per month (in Egyptian pounds)

2. A full-time job in the government sector in a mixed-gender work environment that pays $W(1+\delta)$ per month (in Egyptian pounds)"

in which W is the monthly salary of the female respondent or her reserved monthly salary (if she is not working). Before this question, the survey asks female respondents about their monthly salary if they work. If not, another question asks how much the approximate minimum salary should be so that they accept the job and start working. The response to either of these questions will be recorded and used as W in the DCE alternatives. The variable W is tailored to each respondent, reflecting their unique (reserved) monthly salary. This individualized approach is essential, as the survey cannot employ a uniform value for everyone. Individuals have different (reserved) salaries. This study contributes to the literature

by adopting this method. Typically, discrete choice experiments (DCEs) focus on specific jobs, such as hospital nurses, and use the market salary for that job as the base salary (W). Consequently, they target a selected sample of the population interested in that particular job. In contrast, this study aims to elicit preferences from a broader audience, encompassing anyone who can potentially participate in the labor market.

The monthly salary between the two alternatives varies by a factor of δ, which is randomly adjusted between -0.20 and +0.30 (in increments of 0.05) depending on the survey sections described below. Therefore, the second alternative has a monthly salary that can be up to 20% lower than W or 30% higher than W. The factor δ changes randomly in some sections (described below) and across respondents.

The DCEs are split into four sections: In the first section, a respondent receives a DCE question (one choice set) in which the alternatives (alternatives A and B in the example choice set described above) differ on one attribute only: all-female vs. mixed-gender work environment. The other two attributes are kept identical between the two alternatives but randomly selected from the possible space of attributes. For instance, the other attributes in both alternatives A and B can be part-time and in the private sector. The first alternative (i.e., A), which has the monthly salary W, is always all-female and the second alternative (i.e., B), with a monthly salary of $W(1+\delta)$, is always mixed-gender. Since there is anecdotal evidence that an all-female environment is preferred over a mixed gender environment, we expect that almost everyone chooses alternative A over B if δ is zero or negative. Thus, to reduce the required sample size and increase efficiency, I chose positive numbers for δ in this section. Therefore, δ is randomly selected from the following set: 0.05, 0.10, 0.15, 0.20, or 0.25. Immediately after this question, I asked the female respondent which of the two alternatives her husband would choose for her (not for himself). The alternatives and δ remain the same as the first question. If a female respondent is unmarried, I ask her to consider the persona of her future husband and answer the question from his point of view.

In the second section, a respondent receives a DCE question in which the alternatives

vary on one attribute only: government vs. private sector. Like the first section, the other two attributes are kept the same between the two alternatives but selected randomly for each respondent from the possible space of attributes. The first alternative (i.e., A), which has the monthly salary W, is always in the government sector, and the second alternative (i.e., B), which has the monthly salary $W(1+\delta)$, is always in the private sector. Since the literature on FLFP in the MENA region predominantly argues (based on correlations) that government jobs are preferred over private sector jobs, we expect that almost everyone chooses alternative A over B if δ is zero or negative. Therefore, I chose positive numbers for δ to reduce the necessary sample size and increase efficiency. Similar to the previous section, immediately after the question, I ask female respondents which of the two alternatives their husbands (or potential husbands) may choose for them (the female respondents).

In the third section, one DCE question is displayed to every respondent in which the only attribute different between the alternatives is whether the job is full-time or part-time. The respondent is informed that a part-time job takes half the time of a full-time job. Keeping the hourly wage the same between the two jobs, the monthly salary of a part-time job is half that of a full-time job. Since the literature almost always argues that women prefer part-time jobs to full-time jobs, the first alternative displayed is always a part-time job, which has a monthly salary of $W/2$ (half a full-time job), and the second alternative presented is always full-time and has a monthly salary of $W(1+\delta)$. Therefore, δ will take positive numbers. Similar to the previous sections, immediately after this question, I ask female respondents which of the two alternatives their husbands (or potential husbands) may choose for their wives (the female respondents).

In the final section, I present four DCE questions to female respondents, in which two of the three attributes differ between the alternatives. With two attributes changing, the second alternative may sometimes have more attractive attributes than the first alternative. For example, the second alternative might be part-time in the government sector, while the first is full-time in the private sector. In such cases, the monthly salary assigned to the

second alternative is better if it is lower than that of the first alternative. So, this means δ can take negative values. I vary δ from -0.20 to +0.30 for these DCE questions (it is not symmetric, as such cases do not occur symmetrically). The range of δ is larger in this section compared to the previous sections, as two attributes differ between the alternatives instead of one. Immediately after each of the four questions, I ask female respondents which of the two alternatives their husbands (or potential husbands) might choose for their wives (the female respondents).

I also gather men's preferences. Male respondents observe the same DCE sections in the survey, but the questions ask which alternative they prefer for their wives or potential future wives (if they are unmarried). After each DCE question, I present the same alternatives (with the same attributes and δ) to male respondents and ask them which of the two alternatives they believe other men might choose for their wives. In other words, I inquire about their perceptions of other men's preferences.

Before the DCE sections, the survey collects demographic information, such as respondents' age, education, marital status, and the number of children. It also gathers the spouses' levels of education of both female and male participants. For female respondents, the survey asks about their salaries or reserved salaries. For male respondents, it inquires about their wives' working status and their salaries or reserved salaries. As discussed, the salary or reserved salary is used as W in the DCE questions.

Using the responses to the choice sets, I estimate the respondents' willingness to pay (WTP) for each job attribute with a mixed logit choice model (McFadden and Train, 2000; Revelt and Train, 1998). In addition, I estimate women's perceptions of their husbands' WTP for each job attribute and men's perceptions of other men's WTP for those attributes. The mixed logit choice model is suitable for this analysis because we observe responses to multiple choice sets from each respondent. This model does not require the assumption of independence of irrelevant alternatives (IIA), which is unlikely to hold in a setting where jobs can vary across many dimensions.

The mixed logit choice model estimates a latent utility function as follows:

$$U_{ij} = \beta_1 D_{j1} + \beta_2 D_{j2} + \beta_3 D_{j3} + \beta_4 \delta_{ji} + \beta' X_i + \varepsilon_{ij} \tag{1}$$

in which U_{ij} is the utility of respondent i from alternative j of a choice set. The binary variables D_{j1}, D_{j2}, and D_{j3} represent each of the three job attributes. The variable D_{j1} is one if alternative j is in a mixed-gender environment and zero if it is in an all-female one. Similarly, D_{j2} is one if alternative j is part-time and zero if full-time, and D_{j3} is one if it is a private job and zero if it is a government sector job. δ_{ji} is the fractional change in wages between the two alternatives in choice set j presented to individual i ($\delta_{ji} = 0.1$ means 10% difference). This is the same δ in $W(1 + \delta)$ in alternative B in the sample DCE question presented a few pages earlier; δ_{ji} for alternative A is zero. X_i is a vector of exogenous individual characteristics including age categories, education categories, and marital status. Age categories are dummy variables representing 18-24, 25-34, 35-44, 45-54, 55-64, and 65-76. Education categories are dummy variables representing less than high school, high school, technical institutes, and college & above (as we will discuss later, most of the sample is college-educated). Marital status is a binary variable equal to one for married respondents and zero otherwise. All respondents are in urban areas.

The WTP for job attribute s is equal to $-\beta_s/\beta_4$, in which $s = 1, 2, 3$ in this study. Our parameter of interest, reported in all the results in this paper, is this ratio. Since δ_{ji} is the fractional change in wages between the two alternatives (a number between -0.2 and +0.3), the WTP is also measured as the fractional change in monthly salaries. A positive WTP indicates that a respondent requires a salary increase equal to the size of the WTP to accept that attribute, while a negative WTP shows that a respondent is willing to accept a lower salary for that attribute. For example, a WTP of +0.1 for a job attribute means that a respondent demands a 10% higher salary to accept that attribute.[2] Results are presented

[2]Most discrete choice studies focus on a specific occupation—such as nursing—where the market wage is known. These studies typically vary salaries around the market rate across respondents. The salary shown in each choice task is used as an independent variable in the regression, taking the place of δ in Equation 1.

and discussed in Section 4.

Although this study aims to identify the WTP for these three attributes, in a separate set of regressions, I also included pair-wise interactions of attributes in the mixed-logit model in Equation 1. The results for those regressions are reported in Tables B-E in the Online Appendix. Most estimates of those interactions are statistically insignificant, but I discuss some of their patterns in Section 4.

3 Data

To collect the survey, I recruited a vendor specializing in online surveys, renowned for having the largest web panel in the industry and prestigious clients, such as The Economist magazine and the British government. They own a large web panel with over 350,000 individuals in Egypt and have extensive experience conducting surveys in the Middle East, particularly in Egypt.

There were several reasons for conducting the survey online rather than by phone or face-to-face. Firstly, a survey with DCEs is complex. The job alternatives have multiple attributes, and it is best for respondents to visually see and read the attributes themselves, allowing them to contemplate and make more informed decisions. This is feasible when the survey is conducted online, not over the phone. Secondly, due to the complexity of the questions, respondents often need to read a DCE question multiple times. Online surveys allow respondents to review questions as many times as they wish. In contrast, during phone or face-to-face surveys, some respondents might hesitate to ask an enumerator to repeat questions due to social pressures, such as concerns about annoying the enumerator or appearing unintelligent. Thirdly, respondents require ample time to consider the alternatives

Since salary is measured in units of a currency, β_{salary} in such regressions is interpreted in the units of that currency. Therefore, the WTP, given by $-\beta_s/\beta_{salary}$, is interpreted as the number of units of that currency respondents demand for attribute s. In contrast, this study allows salary to vary widely across individuals as each respondent has her/his own (reservation) salary. Therefore, we use δ instead of salary in the regression, and β_4 in Equation 1 is interpreted as percentage change in salary. Accordingly, the WTP, calculated as $-\beta_s/\beta_4$, reflects the percentage of salary that respondents demand in exchange for attribute s.

carefully and provide accurate answers. Online surveys offer respondents the flexibility to take as much time as they need, unlike phone or face-to-face surveys. Social pressures to respond quickly to an enumerator can reduce the time available for contemplation, potentially compromising the quality of responses. Fourthly, online surveys provide privacy and are not influenced by social desirability bias. Unlike phone or face-to-face surveys, respondents do not need to answer questions from enumerators, in front of whom they might feel the need to conceal their true beliefs due to social pressures and to attain social desirability. This is particularly important for this study as the DCE questions aim to elicit preferences on a sensitive topic. Respondents might falsify their preferences in front of a human enumerator, presuming the enumerator's beliefs and preferences, and responding in a way that pleases the enumerator or avoids objection. Therefore, creating a safe space for respondents to answer the DCE questions truthfully and avoid social desirability bias is essential. Online surveys offer all these features.

The primary drawback of conducting an online survey in a developing country like Egypt is that the sample may not fully represent the population. Nevertheless, for this study, an online survey is preferable to phone or face-to-face surveys for the aforementioned four reasons. While the sample for this study is not entirely representative of the Egyptian population and includes a higher proportion of college-educated participants, the findings remain valuable and can provide insights into the broader Egyptian population.

An online sample was first collected in October 2022, consisting of 450 men and 450 women residing in urban areas of Egypt. Initial analysis revealed intriguing results and suggested that comparing the college-educated with less-than-college-educated respondents can offer more insights. Since the sample was collected online, over three-quarters of respondents were college-educated, and the results for the less-than-college-educated sample (especially for men) were statistically insignificant. A natural next step was to collect more observations. So, a second round of the survey (with identical questions) was collected in June 2023 to add 202 men and 113 women with less-than-college education to the sample. The total

sample size was 657 men and 565 women. Among respondents, 18 women reported their monthly (reserved) salary as zero. These observations were not useful because $W = 0$ and $W(1+\delta) = 0$. Hence, they provided the same salary across the two alternatives in each DCE question. They were discarded. In addition, two respondents reported very large monthly salaries (about \$45k and \$25k). They were discarded from the sample as well. The results remain consistent even when the discarded observations are included. The final sample used in this study has 635 men and 545 women.

Table 1 presents the summary statistics of demographic variables for the collected sample, with the left panel representing men and the right panel representing women. The top section of the table includes data on age, education, marital status, and the number of children for both men and women. In contrast, the bottom section differs for men and women: the left panel details women's employment and income variables, while the right panel provides this information for men's wives (not men themselves).

The average age of respondents is slightly over 34 years old in both men's and women's samples, and the age range spans from 18 to 76 for men and 18 to 69 for women. Approximately 26% of the sample falls within the 18-24 age bracket, 31% in the 25-34 bracket, 18% in the 35-44 bracket, 16% in the 45-54 bracket, 7% in the 55-64 bracket, and the remaining 2% in the 65-76 bracket. For the Egyptian population, these percentages in 2023 were very similar at 22%, 27%, 21%, 15%, 10%, and 5%, respectively (Galal, 2024).

The education variable, however, differs from the general Egyptian population in urban areas. Over 60% of men and women in the sample are college-educated, which is expected given that more educated individuals are more likely to have access to and use the internet. The results of this study are more likely to be representative of the college-educated population. The less-than-college-educated participants are likely to be a selected group due to their internet usage, which may differentiate them from the average Egyptian with less than a college education. Women in the sample are slightly more educated than men, which aligns with the general population's data.

The summary statistics for marital status and number of children are similar between men and women. However, there are notable differences in employment status. For instance, 28% of women report that they are not working but looking for a job, and 25% say they do not work and are not looking for a job. In contrast, men report that 9% of their wives are not working but looking for a job, and 42% are not working and not looking for a job. One reason for this difference is that men report their wives' employment status. By definition, those wives are married women. However, the women's sample includes single women as well.

4 Results

Table 2 reports the estimated WTP for various job attributes. It has four columns: In column 1, women's WTP for the three attributes of a job for themselves is reported. Column 2 represents women's perception of their husbands' WTP for the three attributes, where the job is intended for their wives, not themselves. If a woman is not married, I ask her to imagine the persona of her potential husband and answer the questions from his point of view. Column 3 shows men's WTP for the three attributes of a job for their wives (or their hypothetical wife if they are single). In column 4, men's perception of other men's WTP for the same job attributes for their wives is presented. As mentioned, a positive estimate indicates that the average respondent demands a higher monthly salary equivalent to the size of the estimated WTP for that attribute. Conversely, a negative estimate means the average respondent is willing to forgo part of their (or their wives') monthly salary to obtain a job with that attribute. The estimated WTP, expressed as a percentage of the (reserved) monthly salary, W, equals the reported estimates in the table multiplied by 100. For example, a WTP of +0.05 for a job attribute means that a respondent demands a 5% higher salary to accept that attribute.

Instead of reviewing each column separately, it is better to study each row (WTP for an

attribute) individually and compare the estimates in the same row across various columns. The first row has the WTP for whether a work environment is mixed-gendered or all-female. As depicted in column 1, the WTP for mixed-gender environments is not statistically different from zero, meaning that women are indifferent between all-female and mixed-gender environments. They, however, think their husbands prefer all-female environments. They believe their husbands demand about 10% higher monthly salary for a job in such environments (column 2). As column 3 shows, women substantially underestimate how much their husbands dislike mixed-gender environments. Men demand 77% higher monthly salaries for a mixed-gender work environment (about eight times larger than women's perceptions of their husbands' WTP).[3] As will be discussed further below, this is the key finding of this study, revealing that men strongly prefer their wives to work in an all-female work environment. Women, however, significantly underestimate this preference.

Men also have a more accurate perception of what other men prefer for their wives (column 4). They believe other men require 47% higher salaries for a mixed-gender work environment. This estimate is not statistically different from the 77% in column 3. In Saudi Arabia, however, Bursztyn, González and Yanagizawa-Drott (2020) found that men think other men are more conservative than they are. They show that this wrong belief leads to lower FLFP, and an intervention to correct this belief increased their wives' FLFP. The WTP for the gender of the work environment among Egyptians, however, does not appear to follow that pattern. The difference between the estimates in columns 3 and 4 in the first row is statistically insignificant, and the size of the estimates suggests that men might slightly underestimate how much other men value an all-female environment.

Estimates in the second row are statistically similar across columns 1-4. Women prefer

[3]Some of the estimated WTP values for men in this study—such as the aforementioned 77% figure—exceed the maximum value of δ in the survey (30%), making them extrapolations beyond the observed range. Such extrapolations are acceptable as long as the model is correctly specified. Acknowledging this, one should note that no model is perfect, and our model follows the common specification in the literature and uses indicator variables. I also estimate an alternative model with interaction terms in the appendix as a robustness check, which confirms the results. Importantly, the absolute magnitude of the estimated WTP is less critical than its relative size across comparisons. The results consistently show that men strongly prefer all-female work environments.

full-time jobs and demand 39% higher monthly salaries if the job is part-time. They think their husbands demand 31% higher salaries (which is not statistically different from their own WTP of 39%). The estimate for men in column 3 is statistically consistent with this perception (37%). Men's perception of other men's WTP is also statistically similar at 41%. It is surprising that all respondents prefer full-time jobs, given that the literature on the MENA region suggests women (and their husbands) might favor part-time jobs due to societal expectations of their responsibilities at home. This preference can be explained by the significantly higher total earnings associated with full-time jobs. The survey informs respondents that part-time jobs require 20 hours per week (half of a full-time job), resulting in monthly salaries in the DCE questions, W, being halved for part-time jobs, which is a substantial decline.

Estimates on the third row are the WTP for government vs. private-sector jobs. The estimate in column 1 is statistically insignificant and does not offer evidence that women prefer a government job over a private-sector job. However, they think their husbands prefer government jobs and demand about 7% higher salaries for private-sector jobs (column 2). In reality, men require 20% higher salaries (column 3), but this is not statistically different from the 7% for women's perception of their WTP (column 2). Men's perception of other men's WTP is statistically similar (although the point estimate is 10%). The FLFP literature in the MENA region argued that the strong prevalence of women in the government sector is an indicator of women's and men's preference for government sector jobs, but the results in Table 2 reveal that this is pronounced for men only, and women do not care about where a job is.

Overall, these results show that for men, who have a significant agency over women's work decisions, the gender composition of the workplace is the most important attribute significantly affecting their decision. This preference can be key in explaining the puzzle of female labor force participation. Not many jobs offer such an environment (teaching, for instance, is one of the few.) Hence, women are unlikely to find a job that their husbands

approve of. Thus, a large section of women remain out of the labor market. This is the key contribution of this study.

This study cannot explain why men have a strong aversion to mixed-gender work environments. One possible reason is simply jealousy; men may not want their wives to interact with other men, especially if they fear such interactions could lead to emotional intimacy, whether justified or not. Another reason could be that men believe all-female work environments are safer for their wives, as they may perceive that harassment of any kind is less likely to occur in such settings. This belief may stem from their broader experience in the labor market and could be grounded in reality. It might also reflect an overestimation of, or overreaction to, the perceived risks of mixed-gender settings. In any case, the desire to protect their wives from these risks may drive their aversion to such workplaces. A third reason can be that men believe women working in mixed-gender workplaces could tarnish their family's reputation and expose them to gossip and judgment. A fourth reason might be that men believe a female boss and female co-workers create a less discriminatory, less competitive workplace, offer more family-friendly policies, provide a better learning environment, and increase the chances of promotion. However, whatever their beliefs (and preferences) are, they should be different from women's—otherwise, the estimates in columns 1 and 3 would be similar.

As discussed, the estimate on the last row of column 3 shows that men prefer government sector jobs for their wives. However, the strong presence of women in government sector jobs could also be because some jobs in this sector, like teaching in primary schools, have an all-female workplace. Moreover, when one includes the pairwise interactions of attributes in Equation 1, the mixed-gender and private sector interaction generates a positive WTP (with a p-value of 0.11), which implies that men prefer mixed-gender workplaces in the government sector over the private sector (column 3 in Table B in the Appendix). This could be because the government can enforce a safer and more equitable work environment for women than the private sector.

One of the main demographic characteristics that can affect the WTP for these attributes

is education. I split the sample into college-educated and less-than-college-educated and report the results for each sub-sample in Table 3 in the left and right panels, respectively. College-educated individuals include those who pursued advanced graduate degrees. The point estimates of WTP for college-educated women are almost identical to those for the entire sample (in Table 2). However, the point estimates for college-educated men are generally smaller than those for the whole sample. On the first row, college-educated women's WTP for a mixed-gender work environment is not statistically different from zero, although interestingly, the point estimate is a small negative value, showing a slight preference for mixed-gender environments. College-educated women believe their husbands demand 9% higher monthly salaries for a mixed-gender work environment. Men, however, require 52% more salary for their wives (column 3). They also have a relatively accurate perception of other men's WTP (36% in column 4 is not statistically different from 52% in column 3).

Women with less-than-college education are also indifferent about the gender of the work environment (column 5). They also have a similar estimate of their husbands' WTP as college-educated women (column 6 vs. 2). Men with less-than-college education, however, have a very large but statistically insignificant WTP for a mixed-gender work environment. The point estimate shows they demand about 179% higher monthly salary for a mixed-gender work environment. I estimated an insignificant WTP for less-than-college-educated men after the first round of data was collected in October 2022. At the time, I attributed this to sample size. Consequently, I collected a second round of data with the same survey in June 2023, focusing on expanding the less-than-college-educated sample. Although the less-than-college-educated sample became as large as the college-educated sample (compare the numbers of observations or respondents in columns 3 and 7 of Table 3), their WTP remained insignificant. Hence, one can conclude that it is unlikely that the insignificant estimate of WTP is due to sample size. In addition, the female sample is about 33% smaller than the male sample (194 in columns 5 and 6 vs. 306 in columns 7 and 8), but their WTP is precisely estimated. This also corroborates the fact that the sample size is probably not

the issue.

Although this estimate is insignificant, there are three reasons to suggest that less-than-college-educated men exhibit a higher WTP for a mixed-gender workplace compared to college-educated men. First, the point estimate for less-than-college-educated men is notably large (1.786) relative to that for college-educated men (0.535). Similarly, the WTP for the whole sample (0.779 in Table 2) is driven upward (from 0.535 for college-educated men) by this subgroup's higher WTP. Second, when examining men's perceptions of their peers' WTP, the less-than-college-educated men report a higher value than the college-educated men (74% in column 8 vs. 36% in column 4), although the difference is not statistically significant.

Third, the insignificance of the WTP estimate appears to stem from the highly insignificant coefficient of change in monthly salary (δ in Equation 1) in the regression for column 7 (see Table A in the Appendix). Since WTP is derived as the ratio of the attribute coefficient to the monthly salary coefficient—as described by the end of Section 2—its statistical insignificance is a direct consequence of the imprecision of the coefficient of change in monthly salary (column 3 in Table A). Importantly, and as mentioned before, this issue is not due to sample size, because the coefficient of change in monthly salary is statistically significant for smaller subgroups as well (like for less-than-college-educated women; see columns 1 and 2 of Table A). The evidence suggests that the insignificant coefficient of monthly salary might be due to insufficient variation in this variable in the data. As previously mentioned, salaries for mixed-gender environments could have been up to 30% more than those for all-female environments in the survey. However, many less-than-college-educated men may choose all-female work environments even if the salary for the mixed-gender environment is 30% higher. In other words, even 30% was not large enough to influence the decisions of less-than-college-educated men and encourage them to opt for mixed-gender environments. The data show that the share of less-than-college-educated men who chose the job in a mixed-gender environment remains zero for any δ as it increases from 5% to 30%. The survey should have

allowed δ to vary more than 30%, maybe up to 150%, to generate enough variation in decisions. The need for a larger range of δ suggests that less-than-college-educated men demand substantially higher wages (more than 30%) for mixed-gender settings. Collectively, these three reasons suggest that the WTP for mixed-gender work environments is higher among less-than-college-educated men than among their college-educated counterparts.

One can estimate the WTP for pairwise interactions of attributes in these two subsamples. The results, in Table OA1 in the Online Appendix, provide some evidence that college-educated men may dislike mixed-gender environments in the private sector more than the government sector, but the p-value is 0.12. The estimate for less-than-college-educated men is statistically insignificant.

Since the results for less-than-college-educated men were insignificant, I focus on the college-educated sample for the rest of the analysis. As mentioned in Section 3, the college-educated sample is also more likely to be representative of the college-educated Egyptians.

Another factor that can create heterogeneity in results is marital status. Married respondents may respond differently to the same questions compared to single ones. One reason could be that marriage can change preferences. In addition, as mentioned, single respondents were asked to assume that they are married to someone with the most likely characteristics as their spouse. One may argue that single respondents may have less accurate responses than married ones, as they have to assume a hypothetical marriage, which might be idealistic. In Table 4, I split the college-educated sample into married and single respondents. The sizes of the coefficients differ between the two groups. College-educated married women are indifferent about the gender of the work environment. However, interestingly, single women prefer a mixed-gender environment, potentially because a mixed-gender environment may offer opportunities to meet their future husbands. Married women think their husbands prefer an all-female work environment, but they may significantly underestimate their husbands' WTP (13% in column 2 vs. 83% in column 3). Single college-educated women, however, do not believe their future husbands care about the gender of the work environment, which

may again be an underestimation of reality, as single college-educated men demand 31% higher salaries for a mixed-gender work environment. The point estimate of WTP (31% in column 7) is substantially smaller than the point estimate for WTP of married men (83% in column 3), although the difference is not statistically significant. Single college-educated men have an accurate perception of other men's WTP for an all-female work environment (both estimates in columns 7 and 8 are about 30%).

Married women demand higher salaries than single women for a part-time job (24% vs 49%). This is interesting but not surprising, as married women have more responsibilities at home in Egyptian society and prefer part-time jobs more. The WTP estimate in the third column is not statistically significant. However, married men's perception of other men's WTP (column 4) suggests that college-educated married women may underestimate married men's interest in full-time jobs for their wives (17% in column 2 vs. 36% in column 4). College-educated single women, however, are optimistic about how much their future husbands will prefer full-time jobs. In reality, college-educated single men demand 13% higher salaries for part-time jobs (vs. 40% that single women predict). College-educated single men's prediction of other men's WTP (column 8) is statistically similar to their own (column 7). The WTP estimates for the private sector attribute are small and imprecise, except for the married women's perception of their husbands' WTP, which is about 11%. The estimate for married men is too imprecise to test whether this perception is correct.

Another approach to examine heterogeneity in the results is to divide the sample based on whether a female respondent or a male respondent's wife is employed. The left and right panels of Table 5 present the findings for college-educated working and non-working women/wives, respectively. Nearly half of all women are employed, resulting in an equal split of the women's sample between the left and right panels: 221 working and 229 not working (columns 1, 2, 5, and 6) 1. The sample for men is notably smaller because nearly half are single (without wives). Among the married men, half of their wives are employed, and half are not: 94 working wives and 91 non-working wives. Therefore, the results for men

are less precise, though still interesting.

College-educated working women prefer mixed-gender environments. They are willing to accept 12% lower salaries to work in mixed-gender environments (column 1). One hypothesis to explain this interesting result is that all-female work environments are sometimes more emotionally competitive or socially charged, as some anecdotal evidence suggests. However, further research is necessary to explain this preference. Working women think their husbands are indifferent to the gender mix of the work environment (column 2). In reality, college-educated men with working wives prefer all-female environments (column 3). Nevertheless, their WTP (26%) is smaller than that of college-educated men in Table 3 (52%) and is the smallest WTP for the mixed-gender attribute among men's subgroups. This shows they are more comfortable allowing their wives to work in mixed-gender environments, which could be why their wives are already working. Their prediction of other men's WTP is also relatively accurate.

Non-working women do not care about the gender mix of the work environment. They, however, think their husbands (or potential husbands) do care and demand a 14% higher salary for that (columns 5 and 6). The estimate of the additional salary men with non-working wives demand for the mixed-gender attribute is the largest of all estimates reported in this study (first row in column 7), but also the most imprecise. More generally, estimates of WTP for all attributes in columns 7 and 8 (men with non-working wives) are statistically insignificant and uninformative.

College-educated working women demand higher salaries for part-time jobs than their non-working counterparts (44% in column 1 vs. 24% in column 5). This is not surprising, as working women are likely employed in full-time positions and are more accustomed to such roles. Men with working wives also prefer full-time jobs, but almost half as much as working women (24% in column 3 vs. 44% in column 1). They also accurately predict other men's WTP for this attribute.

All estimates of WTP for private sector jobs in the third row are small and statistically

insignificant, showing that this is not an important attribute to these sub-samples.

Overall, this study offers five sets of results: 1) Women, in general, are indifferent to the gender of the work environment, and some sections of women, such as college-educated working and single women, even prefer mixed-gender work environments (probably for different reasons). 2) Women know that their (potential) husbands prefer all-female work environments, but they gravely underestimate men's dislike of mixed-gender environments. This is the most important job attribute that men consider for their wives and has profound implications for women's labor force participation. Men are likely to veto jobs that are in mixed-gender environments, but few jobs are in all-female work environments. Hence, FLFP remains low despite more educational achievement and lower fertility rates. 3) Some evidence suggests college-educated men dislike mixed-gender work environments less than less-than-college-educated ones. In addition, college-educated men with working wives dislike mixed-gender environments the least. 4) There is almost universal agreement on the WTP for part-time jobs among men and women. This WTP is large, but approximately half of the men's WTP is for a mixed-gender work environment. It is the most important attribute among the three for women. 5) Controlling for the gender composition of the work environment and full vs. part-time attribute, there is no evidence that women care about whether a job is in the government or private sector. There is evidence that all men in the sample prefer government jobs for their wives, but the WTPs are small and mostly statistically insignificant for the sub-samples of men.

5 Conclusion

The result of this study may explain the low FLFP rates in the MENA region. This is the only region where husbands (male guardians in general) have the final word on women's decision to work. Therefore, husbands' preferences are critical to women's labor supply. This study showed that in Egypt, the most important job attribute for a husband is the

gender of the work environment. They demand 77% higher salaries for mixed-gender work environments, which means they will most likely veto any woman's decision to work in a mixed-gender work environment. Since few jobs have an all-female work environment, many Egyptian women are left out of the labor market. So it is not surprising to see low FLFP in Egypt.

Husbands' veto power over their wives' (and daughters') decision to work is enshrined in law in most countries in the region. It has also become the social norm enforced culturally for centuries. If the same dislike of mixed-gender environments exists in other MENA countries, it can explain the puzzle of the low FLFP rate in the MENA region.

These results help to devise more effective policies to address low FLFP rates. One potentially effective policy is a legal reform that reduces men's authority in women's labor supply decisions. Such a legal reform may be challenging and/or may not have a significant effect in the short run if social norms are stronger. Complementary policies may include 1) encouraging female entrepreneurs to create all-female work environments, 2) allowing women to work from home (and hence, reducing interactions to online only), and 3) increasing safety of workplaces, particularly mixed-gender ones, by imposing punitive laws against male co-workers or employers who create unsafe or toxic work environments. In addition, the results of this policy may help us identify less effective policies. For example, providing job amenities such as child care at work or offering transportation may not be effective when men demand 77% higher monthly salaries for jobs in mixed-gender workplaces (practically any job available in the labor market).

Further research is necessary to understand why men dislike mixed-gender work environments and what can be done about it.

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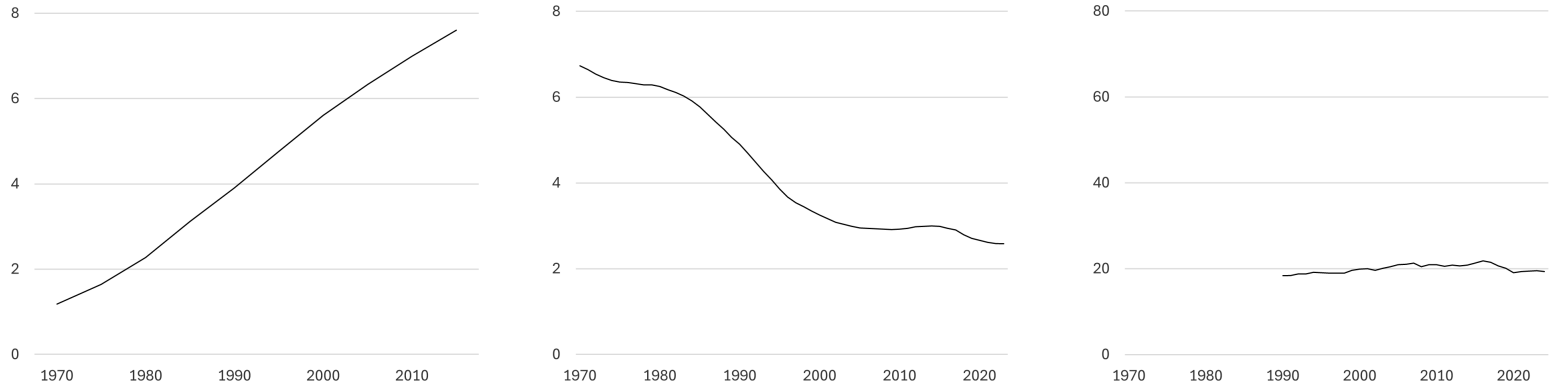
Figures and Tables



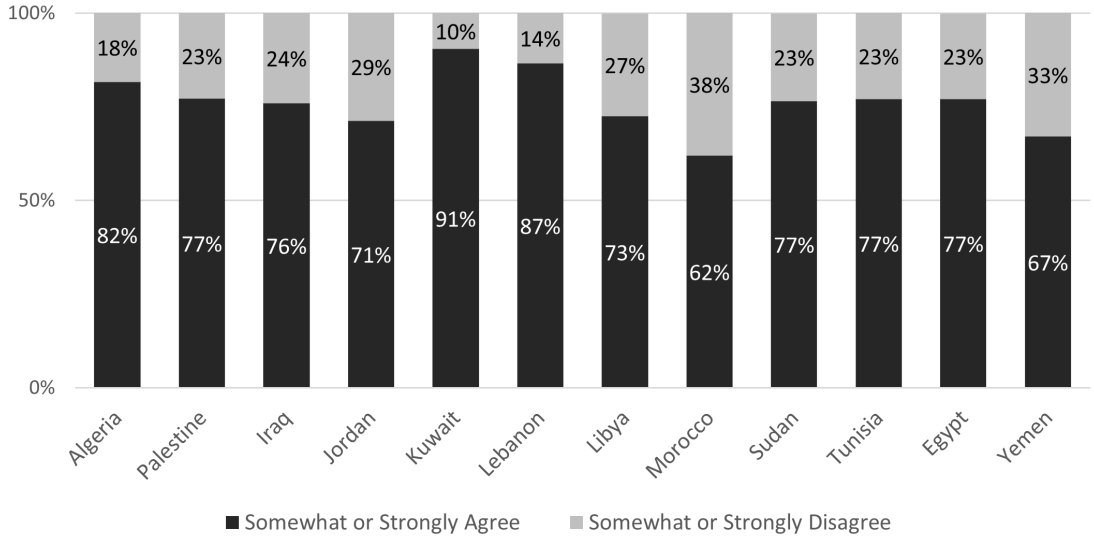
(a) Average years of education for women ages 15-64

(b) Total fertility rate (births per woman)

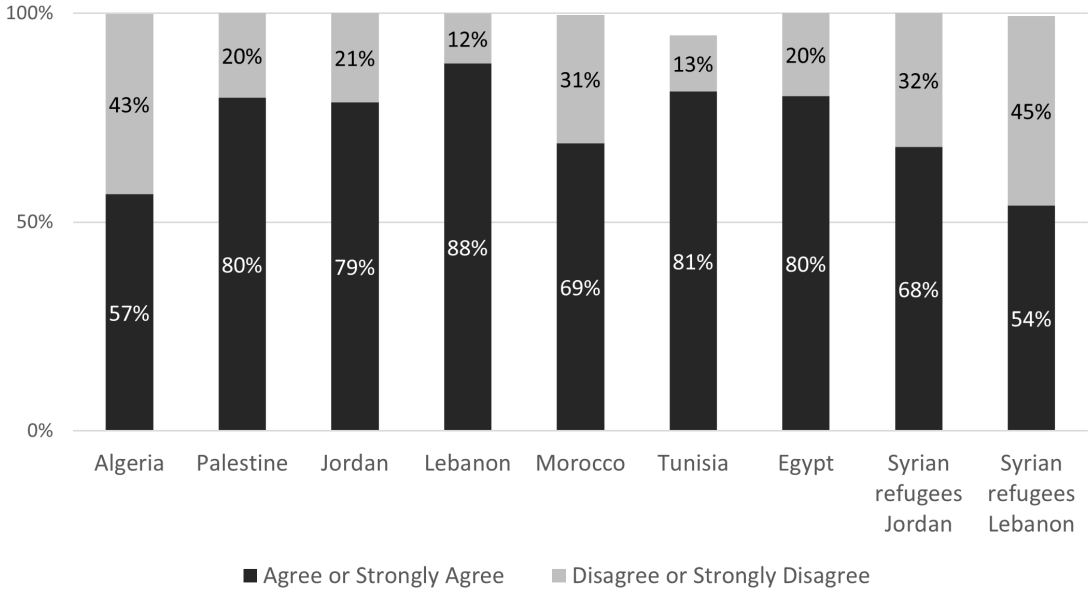
(c) Female labor force participation rate (% of women ages 15-64)

Figure 1: Education, Fertility, and Labor Force Participation of Women in MENA

Note: Figure 1a depicts the author's calculations using the Barro and Lee (2013) dataset. It is produced by calculating the population-weighted average of years of education for women across MENA countries. The data source for Figures 1b and 1c is the World Bank Development Indicators (http://data.worldbank.org/indicator/SP.DYN.TFRT.IN and http://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS; accessed on April 25, 2024). The female labor force participation rates in Figure 1(c) are based on the International Labor Organization (ILO) estimates.



(a) The distribution of answers to the 2013 Arab Barometer Survey question: "To what extent do you agree with the following statement: A married woman can work outside the home?"



(b) The distribution of answers to the 2016 Arab Barometer Survey question: "To what extent do you agree with the following statement: A married woman can work outside the home if she wishes?"

Figure 2: Education, Fertility, and Labor Force Participation of Women in MENA

Note: Author's calculations, based on Arab Barometer (2013)

Table 1: Summary Statistics

	Women ($N = 544$)				Men ($N = 634$)			
	Mean	St. dev.	Min	Max	Mean	St. dev.	Min	Max
Age	34.52	11.50	18	69	34.75	12.91	18	76
Education								
Less than High School	0.06	0.24	0	1	0.07	0.26	0	1
High School	0.15	0.36	0	1	0.20	0.40	0	1
Middle or Higher Technical Institutes	0.15	0.35	0	1	0.21	0.41	0	1
Bachelor's Degree and above	0.64	0.48	0	1	0.52	0.50	0	1
Married	0.53	0.50	0	1	0.52	0.50	0	1
Number of Children	1.20	1.46	0	10	1.07	1.29	0	6
Employment					Men's wives (N = 330)			
Work for the government	0.12	0.33	0	1	0.19	0.39	0	1
Work for the private sector	0.19	0.40	0	1	0.15	0.36	0	1
Have my own business	0.14	0.35	0	1	0.13	0.33	0	1
Work for the family business	0.01	0.08	0	1	0.02	0.13	0	1
Not working but looking for a job	0.28	0.45	0	1	0.09	0.29	0	1
Not working	0.25	0.43	0	1	0.42	0.49	0	1
Monthly Salary (in USD)	280	460	0.15	5,645	302	382	0.15	3,556
Minimum Acceptable Monthly Salary (in USD)	245	261	0.20	2,540	343	297	0.25	2,540

Note: Minimum acceptable monthly salary is asked when a female respondent or a male respondent's wife was not working. A few observations for which monthly salary or minimum acceptable monthly salary were zero were removed from the sample.

Table 2: Willingness to Pay for Various Job Attributes

	Women's pref.	Women's perceptions of their husbands' pref.	Men's pref.	Men's perceptions of other men's pref. (for their wives
	(1)	(2)	(3)	(4)
Mixed-gender	-0.020	0.100	0.765	0.466
	(0.023)	(0.031)	(0.259)	(0.115)
Part-time	0.393	0.309	0.367	0.411
	(0.062)	(0.059)	(0.134)	(0.100)
Private sector	0.030	0.069	0.196	0.102
	(0.026)	(0.032)	(0.099)	(0.049)
Observations	7,616	7,616	8,876	8,876
Repsondents	544	544	634	634
Choice sets	7	7	7	7

Note: The coefficients show WTP estimates as a share of wage using a mixed-logit choice model. Positive numbers mean a higher salary is demanded for the associated attribute. When answering questions related to columns (2) and (3), a single woman or man assumes the persona of their potential spouse. Control variables are age categories (18-24, 25-34, 35-44, 45-54, 55-64, 65+) education categories, and marital status. Standard errors clustered at the individual level are in parentheses.

Table 3: Willingness to Pay for Various Job Attributes for College vs. Less-than-college Educated Respondents

	College Educated				Less-than-College Educated			
	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mixed-gender	-0.028	0.093	0.516	0.362	0.002	0.113	1.786	0.735
	(0.024)	(0.034)	(0.163)	(0.094)	(0.053)	(0.063)	(2.070)	(0.425)
Part-time	0.325	0.260	0.229	0.302	0.558	0.417	0.931	0.698
	(0.061)	(0.061)	(0.092)	(0.079)	(0.172)	(0.143)	(1.072)	(0.391)
Private sector	0.058	0.106	0.107	0.069	0.045	0.024	0.573	0.192
	(0.030)	(0.040)	(0.070)	(0.046)	(0.054)	(0.055)	(0.749)	(0.156)
Observations	4,928	4,928	4,592	4,592	2,716	2,716	4,284	4,284
Repsondents	352	352	328	328	194	194	306	306
Choice sets	7	7	7	7	7	7	7	7

Note:The coefficients show WTP estimates as a share of wage using a mixed-logit choice model. Positive numbers mean a higher salary is demanded for the associated attribute. A single woman or man assumes the persona of their potential spouse when answering questions related to columns 2, 3, 6, and 7. Control variables are age categories (18-24, 25-34, 35-44, 45-54, 55-64, 65+) and marital status. Standard errors clustered at the individual level are in parentheses.

Table 4: Willingness to Pay for Various Job Attributes for College-Educated Married vs. Single Respondents

	Married				Single			
	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mixed-gender	0.005	0.134	0.833	0.423	-0.090	0.030	0.305	0.280
	(0.027)	(0.049)	(0.449)	(0.153)	(0.053)	(0.049)	(0.108)	(0.107)
Part-time	0.241	0.167	0.377	0.358	0.486	0.401	0.129	0.229
	(0.060)	(0.060)	(0.245)	(0.125)	(0.151)	(0.140)	(0.077)	(0.095)
Private sector	0.049	0.108	0.233	0.080	0.078	0.102	0.023	0.051
	(0.031)	(0.049)	(0.193)	(0.066)	(0.063)	(0.067)	(0.059)	(0.062)
Observations	2,688	2,688	2,590	2,590	2,226	2,226	2,016	2,016
Repsondents	192	192	185	185	159	159	144	144
Choice sets	7	7	7	7	7	7	7	7

Note:The coefficients show WTP estimates as a share of wage using a mixed-logit choice model. Positive numbers mean a higher salary is demanded for the associated attribute. A single woman or man assumes the persona of their potential spouse when answering questions related to columns 2, 3, 6, and 7. Control variables are age categories (18-24, 25-34, 35-44, 45-54, 55-64, 65+) and marital status. Standard errors clustered at the individual level are in parentheses.

Table 5: Willingness to Pay for Various Job Attributes for College-Educated Working vs. Non-working Women/Wives

	Women or Men's Wives Working				Women or Men's Wives Not Working			
	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mixed-gender	-0.123	0.018	0.257	0.172	0.044	0.141	18.439	0.979
	(0.048)	(0.047)	(0.135)	(0.076)	(0.030)	(0.047)	(241.06)	(0.764)
Part-time	0.436	0.381	0.241	0.270	0.239	0.166	4.677	0.522
	(0.119)	(0.136)	(0.129)	(0.097)	(0.062)	(0.054)	(61.278)	(0.415)
Private sector	0.079	0.116	0.070	0.035	0.043	0.095	5.421	0.174
	(0.052)	(0.073)	(0.088)	(0.053)	(0.034)	(0.043)	(71.491)	(0.204)
Observations	2,632	2,632	1,316	1,316	2,282	2,282	1,274	1,274
Repsondents	188	188	94	94	163	163	91	91
Choice sets	7	7	7	7	7	7	7	7

Note:The coefficients show WTP estimates as a share of wage using a mixed-logit choice model. Positive numbers mean a higher salary is demanded for the associated attribute. A single woman or man assumes the persona of their potential spouse when answering questions related to columns 2, 3, 6, and 7. Control variables are age categories (18-24, 25-34, 35-44, 45-54, 55-64, 65+) and marital status. Standard errors clustered at the individual level are in parentheses.

Appendix

Table A: Coefficients of the Mixed-Logit Models in Equation 1 – Less-than-College-Educated Sample

	Women's pref.	Women's perceptions of their husbands' pref.	Men's pref.	Men's perceptions of other men's pref. (for their wives
	(1)	(2)	(3)	(4)
Mixed-gender	-0.003	-0.202	-0.656	-0.566
	(0.099)	(0.096)	(0.079)	(0.078)
Part-time	-1.048	-0.746	-0.342	-0.538
	(0.127)	(0.122)	(0.084)	(0.093)
Private sector	0.085	0.043	-0.210	-0.148
	(0.105)	(0.101)	(0.077)	(0.072)
Change in monthly salary	1.877	1.791	0.368	0.770
	(0.545)	(0.562)	(0.424)	(0.426)
Age categories				
25 to 34	0.049	0.251	-0.292	-0.179
	(0.167)	(0.169)	(0.123)	(0.130)
35 to 44	-0.125	0.126	-0.235	-0.272
	(0.189)	(0.180)	(0.144)	(0.153)
45 to 54	-0.096	0.073	0.005	0.072
	(0.203)	(0.199)	(0.205)	(0.208)
55 to 64	0.262	0.261	-0.290	-0.145
	(0.241)	(0.296)	(0.308)	(0.271)
65+			0.047	-0.035
			(0.123)	(0.130)
Married	0.048	-0.057	0.069	0.305
	(0.140)	(0.142)	(0.243)	(0.231)
Constant	-0.066	-0.321	-0.028	-0.030
	(0.125)	(0.121)	(0.096)	(0.096)
Observations	2,716	2,716	4,284	4,284
Repsondents	194	194	306	306
Choice sets	7	7	7	7

Note: The coefficients show WTP estimates as a share of wage using a mixed-logit choice model. When answering questions related to columns 2 and 3, a single woman or man assumes the persona of their potential spouse. Standard errors clustered at the individual level are in parentheses.

Table B: Willingness to Pay for Various Job Attributes and Their Interactions

	Women's pref.	Women's perceptions of their husbands' pref.	Men's pref.	Men's perceptions of other men's pref. (for their wives
	(1)	(2)	(3)	(4)
Mixed-gender	-0.039	0.074	0.733	0.457
	(0.033)	(0.040)	(0.256)	(0.119)
Part-time	0.435	0.346	0.501	0.503
	(0.070)	(0.067)	(0.183)	(0.124)
Private sector	0.036	0.063	0.207	0.116
	(0.036)	(0.040)	(0.120)	(0.066)
Mixed-gender x Part-time	-0.020	-0.020	-0.087	-0.066
	(0.034)	(0.037)	(0.090)	(0.059)
Mixed-gender x Private sector	0.052	0.065	0.150	0.083
	(0.036)	(0.038)	(0.094)	(0.058)
Part-time x Private sector	-0.068	-0.056	-0.174	-0.113
	(0.035)	(0.037)	(0.101)	(0.060)
Observations	7,616	7,616	8,876	8,876
Repsondents	544	544	634	634
Choice sets	7	7	7	7

Note: The coefficients show WTP estimates as a share of wage using a mixed-logit choice model. When answering questions related to columns 2 and 3, a single woman or man assumes the persona of their potential spouse. Standard errors clustered at the individual level are in parentheses.

Online Appendix

Table OA1: Willingness to Pay for Various Job Attributes with Their Interactions for College vs. Less-than-college Educated Respondents

	College Educated				Less-than-College Educated			
	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mixed-gender	-0.045	0.078	0.508	0.394	-0.024	0.061	1.653	0.630
	(0.036)	(0.044)	(0.175)	(0.109)	(0.076)	(0.082)	(1.920)	(0.378)
Part-time	0.387	0.300	0.397	0.423	0.557	0.453	0.912	0.716
	(0.072)	(0.072)	(0.148)	(0.113)	(0.179)	(0.156)	(1.046)	(0.403)
Private sector	0.071	0.105	0.152	0.098	-0.065	-0.048	0.433	0.165
	(0.040)	(0.049)	(0.100)	(0.066)	(0.076)	(0.074)	(0.619)	(0.175)
Mixed-gender × Part-time	-0.032	-0.028	-0.111	-0.121	0.010	-0.012	0.011	0.059
	(0.037)	(0.041)	(0.088)	(0.065)	(0.076)	(0.076)	(0.287)	(0.141)
Mixed-gender × Private sector	0.061	0.054	0.129	0.057	0.039	0.103	0.250	0.148
	(0.041)	(0.044)	(0.083)	(0.055)	(0.073)	(0.077)	(0.400)	(0.159)
Part-time × Private sector	-0.092	-0.054	-0.220	-0.116	0.001	-0.061	0.030	-0.090
	(0.039)	(0.043)	(0.104)	(0.064)	(0.075)	(0.072)	(0.297)	(0.141)
	4,928	4,928	4,592	4,592	2,716	2,716	4,284	4,284
Repsondents	352	352	328	328	194	194	306	306
Choice sets	7	7	7	7	7	7	7	7

Note:The coefficients show WTP estimates as a share of wage using a mixed-logit choice model. Positive numbers mean a higher salary is demanded for the associated attribute. A single woman or man assumes the persona of their potential spouse when answering questions related to columns 2, 3, 6, and 7. Control variables are age categories (18-24, 25-34, 35-44, 45-54, 55-64, 65+) and marital status. Standard errors clustered at the individual level are in parentheses.

Table OA2: Willingness to Pay for Various Job Attributes for College-educated Single vs. Married Respondents

	Married				Single			
	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mixed-gender	-0.008	0.125	0.888	0.467	-0.119	0.001	0.269	0.313
	(0.040)	(0.061)	(0.566)	(0.180)	(0.077)	(0.068)	(0.119)	(0.133)
Part-time	0.292	0.208	0.649	0.496	0.566	0.435	0.238	0.343
	(0.072)	(0.074)	(0.424)	(0.177)	(0.176)	(0.154)	(0.122)	(0.148)
Private sector	(0.063	0.144	0.330	0.119	0.086	0.032	0.039	0.075
	(0.044)	(0.067)	0.276)	(0.093)	(0.082)	(0.069)	(0.091)	(0.099)
Mixed-gender x Part-time	-0.023	0.005	-0.218	-0.136	-0.046	-0.079	-0.046	-0.108
	(0.042)	(0.052)	(0.206)	(0.091)	(0.071)	(0.071)	(0.097)	(0.099)
Mixed-gender x Private sector	0.045	0.009	0.127	0.055	0.097	0.134	0.131	0.061
	(0.048)	(0.056)	(0.156)	(0.072)	(0.076)	(0.080)	(0.094)	(0.087)
Part-time x Private sector	-0.078	-0.083	-0.318	-0.133	-0.114	0.001	-0.158	-0.097
	(0.045	(0.052)	(0.246	(0.093)	(0.078)	(0.074)	(0.103)	(0.090)
	4,928	4,928	4,592	4,592	2,716	2,716	4,284	4,284
Repsondents	352	352	328	328	194	194	306	306
Choice sets	7	7	7	7	7	7	7	7

Note:The coefficients show WTP estimates as a share of wage using a mixed-logit choice model. Positive numbers mean a higher salary is demanded for the associated attribute. A single woman or man assumes the persona of their potential spouse when answering questions related to columns 2, 3, 6, and 7. Control variables are age categories (18-24, 25-34, 35-44, 45-54, 55-64, 65+) and marital status. Standard errors clustered at the individual level are in parentheses.

Table OA3: Willingness to Pay for Various Job Attributes for College-educated Working vs. Non-working Women/ Wives

	Women or Men's Wives Working				Women or Men's Wives Not Working			
	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.	Women's pref.	Women's perceptions of their husband's pref.	Men's pref.	Men's perceptions of other men's pref.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mixed-gender	-0.141	0.004	0.243	0.184	0.032	0.131	21.963	1.089
	(0.072)	(0.073)	(0.164)	(0.101)	(0.043)	(0.055)	(308.684)	(0.855)
Part-time	0.556	0.470	0.321	0.327	0.256	0.177	12.356	0.881
	(0.150)	(0.165)	(0.182)	(0.126)	(0.070)	(0.065)	(173.550)	(0.688)
Private sector	0.100	0.141	0.068	0.030	0.055	0.081	9.281	0.326
	(0.071)	(0.097)	(0.121)	(0.076)	(0.048)	(0.051)	(131.142)	(0.338)
Mixed-gender x Part-time	-0.083	-0.050	-0.063	-0.069	0.004	-0.014	-5.868	-0.298
	(0.062)	(0.074)	(0.110)	(0.075)	(0.043)	(0.047)	(82.628)	(0.288)
Mixed-gender x Private sector	0.112	0.076	0.089	0.045	0.016	0.033	2.160	0.122
	(0.076)	(0.083)	(0.120)	(0.076)	(0.045)	(0.045)	(30.013)	(0.163)
Part-time x Private sector	-0.164	-0.132	-0.087	-0.035	-0.040	-0.006	-9.064	-0.423
	(0.077)	(0.082)	(0.115)	(0.072)	(0.042)	(0.047)	(127.018)	(0.386)
	4,928	4,928	4,592	4,592	2,716	2,716	4,284	4,284
Repsondents	352	352	328	328	194	194	306	306
Choice sets	7	7	7	7	7	7	7	7

Note:The coefficients show WTP estimates as a share of wage using a mixed-logit choice model. Positive numbers mean a higher salary is demanded for the associated attribute. A single woman or man assumes the persona of their potential spouse when answering questions related to columns 2, 3, 6, and 7. Control variables are age categories (18-24, 25-34, 35-44, 45-54, 55-64, 65+) and marital status. Standard errors clustered at the individual level are in parentheses.