

Preferences and the Puzzle of Female Labor Force Participation

Mahdi Majbouri



PREFERENCES AND THE PUZZLE OF FEMALE LABOR FORCE PARTICIPATION

Mahdi Majbouri*

Working Paper No. 1675

November 2023

Send correspondence to:

Mahdi Majbouri
Babson College
mmajbouri@babson.edu

This paper was originally presented during the ERF 29th Annual Conference on “The Future of MENA Development Path: Risks and Opportunities in an Emerging World Order”, May 4-6, 2023.

* Professor of Economics at Babson College and Research Fellow at the Economic Research Forum, Economics Division, Babson College, 231 Forest St., Babson Park, MA 02457, USA. mmajbouri@babson.edu; (+1) 781-239-5549.

First published in 2023 by
The Economic Research Forum (ERF)
21 Al-Sad Al-Aaly Street
Dokki, Giza
Egypt
www.erf.org.eg

Copyright © The Economic Research Forum, 2023

All rights reserved. No part of this publication may be reproduced in any form or by any electronic or mechanical means, including information storage and retrieval systems, without permission in writing from the publisher.

The findings, interpretations and conclusions expressed in this publication are entirely those of the author(s) and should not be attributed to the Economic Research Forum, members of its Board of Trustees, or its donors.

Abstract

Women in the Middle East have had significant achievements in the last four decades. Their educational attainment had continuously increased while their fertility rate declined. Nevertheless, their labor force participation has remained stubbornly low. This phenomenon is known as the puzzle of female labor force participation (FLFP) in the Middle East. In this study, I provide evidence on one of the most important but least studied hypotheses to explain this puzzle: the role of preferences in the household. Using discrete choice experiments, I solicit preferences of women and men toward three aspects of jobs: 1) full-time vs. part-time, 2) government sector vs. private sector, and 3) being in an all-female vs. mixed-gender work environment. I document that men, who have veto power over women's decision to work, are willing to pay a 63% wage penalty if a job is in an all-female environment vs. a mixed-gender environment. They are willing to pay a 30% wage penalty if a job is full-time vs. part-time. But they are indifferent between a government sector or private sector job. Men also correctly predict what other men's preferences are toward these job attributes. Women strongly prefer full-time jobs and are willing to pay a 38% wage penalty for them. Unlike men, they slightly prefer mixed-gender environments over all-female environments but are willing to pay a 5% wage penalty for government sector jobs. They also underestimate how much their husbands prefer all-female work environments over mixed-gender ones and overestimate how much their husbands like government sector jobs. The results show that because men have veto power over women's decision to work and they strongly prefer all-female work environments, women will have very limited jobs to choose from, such as teaching in primary and middle schools. Hence, they will not participate in the labor market as much as women in other regions of the world.

Keywords: Labor Supply, Preferences toward job attributes, Middle East and North Africa

JEL Classifications: J21, J29, J49

ملخص

حققت المرأة في الشرق الأوسط إنجازات هامة في العقود الأربعة الماضية. وقد زاد تحصيلهن التعليمي باستمرار بينما انخفض معدل خصوبتهن. ومع ذلك، ظلت مشاركتهن في القوى العاملة منخفضة بعناد. وتعرف هذه الظاهرة بلغز مشاركة المرأة في القوى العاملة في الشرق الأوسط. في هذه الدراسة، أقدم أدلة على واحدة من أهم الفرضيات ولكن الأقل دراسة لشرح هذا اللغز: دور التفضيلات في الأسرة. باستخدام تجارب اختيار منفصلة، ألتمس تفضيلات النساء والرجال تجاه ثلاثة جوانب من الوظائف: 1) بدوام كامل مقابل بدوام جزئي، 2) القطاع الحكومي مقابل القطاع الخاص، و 3) التواجد في بيئة عمل مختلطة من الإناث مقابل غير المختلطة. توثق الدراسة نتيجة أن الرجال، الذين لديهم حق النقض على قرار المرأة بالعمل، على استعداد لدفع غرامة أجر بنسبة 63% إذا كانت الوظيفة في بيئة نسائية بالكامل مقابل بيئة مختلطة بين النوعين. وإنهم على استعداد لدفع غرامة أجر بنسبة 30% إذا كانت الوظيفة بدوام كامل مقابل دوام جزئي. لكنهم غير مبالين في الاختيار بين وظيفة القطاع الحكومي أو القطاع الخاص. يتنبأ الرجال أيضًا بشكل صحيح بتفضيلات الرجال الآخرين تجاه سمات العمل هذه. تفضل النساء بشدة الوظائف بدوام كامل وهن على استعداد لدفع 38% غرامة أجر لهن. على عكس الرجال، فإنهم يفضلون قليلاً البيئات المختلطة بين النوعين على البيئات النسائية بالكامل ولكنهم على استعداد لدفع غرامة أجر بنسبة 5% لوظائف القطاع الحكومي. كما أنهم يقللون من شأن مدى تفضيل أزواجهم لبيئات العمل النسائية بالكامل على البيئات المختلطة بين النوعين ويغالون في تقدير مدى كون أزواجهم يحبون وظائف القطاع الحكومي. تظهر النتائج أنه نظرًا لأن الرجال لديهم حق النقض على قرار المرأة بالعمل ويفضلون بشدة بيئات العمل النسائية بالكامل، فسيكون لدى النساء وظائف محدودة للغاية للاختيار من بينها، مثل التدريس في المدارس الابتدائية والمتوسطة. وبالتالي، لن يشاركن في سوق العمل مثلهن مثل النساء في مناطق أخرى من العالم.

1. Introduction

Women in the Middle East have garnered significant achievements in the last four decades: Average years of education for women aged 15 to 65 in the region has increased from less than two years in 1970 to over seven years in 2010 (Figure 1(a)). In effect, young women, aged between 20 and 30, in some Middle East and North Africa (MENA) countries are now more educated than young men. In addition, fertility rates declined continuously between 1970 and 2000, from 6.5 to less than three children per woman (Figure 1(b)). Five of the ten biggest declines in fertility rates after 1945 have occurred in MENA. Fertility in Bahrain, Iran, Lebanon, Qatar, and Tunisia is already below the replacement rate of 2.1. Nevertheless, female participation in the labor market has remained stagnant at very low levels, especially compared to the rest of the world (Figure 1(c)). Arguably, after the political instability and the problem of youth unemployment, this puzzle is the most important economic policy question in the region.

This puzzle, which was first documented in a 2004 World Bank Report (World Bank 2004), has received many explanations. Majbouri (2010) describes that some of these explanations attribute the problem to the demand side, some to the supply side, and others to both. On the demand side, scholars argue that there is a low demand for female labor in the Middle East because of social and cultural norms (Chamlou, Muzi, and Ahmed 2011; Moghadam 2013), employer discrimination (Yassin 2013), wage disparity in the private sector (Said 2014, 2015), the structure of the economy (Karshenas et al. 2016), lack of “appropriate” jobs for women (Nazier and Ramadan 2016; Hendy 2015b, 2011; Assaad and El-Hamidi 2001, 2009; Assaad et al. 2014; Assaad et al. 2018), the existence of oil and gas rents in the economy (Ross 2010; Majbouri 2017), and more. On the supply side, the low supply is associated with social and cultural norms (Moghadam 2013), husbands’ preferences and discrimination within the household (Majbouri 2017; Hendy 2015a, 2015b), the existence of oil and gas rents (Majbouri 2017), women’s personal preferences, and more (see also work such as

Esfahani and Shajari 2016, and Bahramitash and Esfahani 2011). But, none of the above hypotheses is supported by experimental or quasi-experimental evidence.

This study is about one of the most important hypotheses, discrimination on the supply side, that is, husbands not letting their wives work. This type of discrimination has been a cultural taboo and hence, not studied. Hence, there is no substantive scientific evidence for it despite its importance. In all countries in the region (except Turkey and Tunisia), because of family laws, women have to seek permission from their male guardians (e.g., husband or father) before they can work, and this permission is revocable by their male guardians at any time. If men's and women's preferences toward women's employment are the same, this law has little impact on FLFP. But if men's preferences are significantly different from women's, this law, which is unique to the MENA region, enforces men's preferences. Therefore, understanding men's and women's preferences toward women's employment outside the home can be a fundamental way to explain the FLFP puzzle.

Some may argue that it is obvious that men in the MENA region prefer that their wife does not work outside the home. However, the best evidence available suggests otherwise. As reported in Figure 2(a), the 2013 Arab Barometer survey shows that in most Arab countries, 70-90% of men agreed with the statement that "a married woman can work outside the home" (Arab Barometer 2013). Similar results are found in the 2016 survey (Figure 2(b)). This is a surprisingly large share of men. One may argue, however, that this number is potentially unreliable due to many survey collection biases for this sensitive question, including the social desirability bias. Hence, a proper unbiased study of men's and women's preferences is necessary.

In this study, I use discrete choice experiments (DCEs) to estimate women's and men's willingness to pay for three job attributes: 1) whether a job is part-time vs. full-time, 2) in private vs. government sector, and 3) in a mixed-gender vs. all-female work environment. The first two

attributes are suggested by the large literature on the topic. The last one is the innovation of this study and related to the hypothesis it is trying to test. My hypothesis is that the gender mix of the work environment is important in men's preferences for jobs for their wives.

To estimate preferences, I designed a questionnaire containing a set of DCEs I prepared and recruited a top global survey vendor with a large web panel in Egypt and experience in running surveys in the country. The data were collected in September 2022. I describe the survey design and the data in Sections 2 and 3. 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. They strongly prefer an all-female work environment. Women, on the other hand, slightly prefer mixed-gender work environments for themselves. They also underestimate men's preference for this attribute. Men also underestimate 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 over part-time jobs (presumably because the total earnings of full-time jobs are higher.) Controlling for these two attributes, there is no evidence that men care about whether a job is in the government vs. the private sector. Women have a slight preference for government sector jobs, but it is six times smaller than how much they care about full-time jobs. I discuss the implications of these results in resolving the puzzle of the low female labor force participation rates in Egypt and possibly the rest of the MENA region in Section 5. The results also help devise better policies to address this issue.

2. Research Design

Preferences in general, and particularly preferences toward women's employment in the MENA region in particular, can be sensitive topics to some respondents. Instead of asking direct questions about these preferences, I devised a set of Discrete Choice Experiments (DCEs) to map preferences

toward 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 private vs. public sector, and 3) in mixed-gender vs. all-female work environments. The first two attributes are suggested by the large literature on the topic. The literature has found a large presence of women in the government sector, which led many to argue women prefer government-sector jobs. In addition, women's responsibilities at home in the MENA region have made many argue that women prefer part-time jobs to full-time jobs. The last attribute on the list (gender of the work environment) is the innovation of this study and related to the hypothesis it is trying to test. My hypothesis is that the gender mix of the work environment is important from men's points of view.

DCEs are used in marketing, transportation, and health economics to evaluate preferences and willingness to pay for various attributes of a product, transportation mode, or healthcare service (Greene and Hensher, 2003, 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).

In the choice experiment for this study, respondents are asked to pick their preferred job between two fictitious alternatives that are offered to them. The fictitious jobs vary in one or two of the three attributes mentioned above. In addition, I varied wages randomly between the two alternatives. The following is a sample question asked from female respondents (as I describe later, the questions for men are slightly different):

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

A) A **full-time** job in the **public sector** in an **all-female** work environment that pays W per month (in Egyptian points)

B) A **part-time** job in the **public 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). Prior to this question, the survey asks female respondents about their (reserved) monthly salary, W . The wage between the two alternatives should be different. δ is a factor that takes values, such as -0.20, -0.15, -0.10, ..., 0.15, 0.20, 0.25, and is randomly varied across questions and respondents.

Each respondent receives seven questions (seven choice sets) like the above in which wages, as well as one or two of the job attributes, vary between the two alternatives. After each of these seven questions, the survey asks women to answer the same question but from their husbands' viewpoint. In other words, it asks how they perceive their husbands would answer the same question. So each female respondent answers seven questions from her point of view and the same seven questions from her husband's point of view. If a woman is single, I ask her to consider what their potential husband would look like and answer the questions from his point of view (hypothetically.)

I also elicit the preferences of men toward the attributes of a job for their wives. In other words, I offer them seven choice sets, similar to the ones for women, but the two alternatives in each choice set are two jobs for their wives. I then ask them which of the two alternatives they think is more suitable for their wives. If a man is single, I ask him to consider the persona of his potential wife when he answers the questions. After each question, I ask men how they think other men would answer the same question for their wives. In other words, I inquire about their perceptions of other men's preferences.

Prior to these DCE questions, the survey inquires about respondents' demographics, such as age, education, marital status, and the number of children. In the case of women, their working status

and their salaries or reserved salaries are also asked. In the case of men, their wives' working status and their salaries or reserved salaries are inquired about.

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 (Revelt and Train, 1998, McFadden and Train, 2000). In addition, I estimate women's perception of their husband's WTP for each job attribute and men's perception of other men's WTP for those attributes. The use of mixed logit choice models is possible since we observe the responses to multiple choice sets by each respondent. It 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.

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

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

in which U_{ij} is the utility of respondent i from alternative j of a choice set; D_{j1} , D_{j2} , and D_{j3} are dummy variables representing each of the three job attributes: 1) all-female vs. mixed-gender work environment, 2) full-time vs. part-time, and 3) government vs. private sector. δ_{ji} is the percentage change in wages between the two alternatives in each choice set. This is the same δ in $W(1 + \delta)$ in alternative B in the sample question a few pages earlier; δ for alternative A is zero. X_i is a vector of exogenous individual attributes, such as age and education. The WTP for job attribute s is equal to $-\frac{\beta_s}{\beta_4}$, 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 percentage change in wages between the two alternatives, the WTP is measured as the percentage change in wages as well. A positive WTP means a respondent is willing to pay for an attribute and a negative one shows a respondent is willing to accept a wage

penalty. For example, a WTP for a job attribute equal to -0.1 means a respondent is willing to accept a 10% wage penalty to get that attribute.

3. Data

I recruited a survey vendor which exclusively collects online surveys, with the largest web panel in the industry and top clients, such as *The Economist* magazine and the British government, to collect the survey. They own a large web panel with over 350,000 individuals in Egypt and had done extensive surveys in the Middle East, particularly in Egypt, before. The sample consists of 450 men and 450 women residing in urban areas of Egypt.

There were several reasons to collect the survey online rather than by phone or face-to-face. First, a survey with DCEs is complex. The alternatives have multiple attributes, and it is best for a respondent to visually see the attributes and read them herself to make a better decision. This is possible when the survey is done online, not on the phone. Second, because of the complexity of the questions, more often than not, a respondent needs to read a DCE question more than once. With an online survey, a respondent can read a question as many times as they like; In a phone or face-to-face survey, some respondents may avoid asking an enumerator to re-read questions because of social pressures (for example, they may feel that the enumerator could be annoyed or assume that they are not smart enough, etc.). Third, a respondent needs time to contemplate the alternatives carefully and answer questions properly. Respondents have as much time as they need in an online survey but not necessarily in a phone or face-to-face survey. Social pressures to respond to an enumerator in a timely manner, among other things, can shorten the response time and affect the

quality of responses.² Fourth, online surveys provide privacy and are not affected 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 may feel the need to hide their true beliefs for the same social pressures described above and to attain social desirability. This is particularly important for this study as the DCE questions here try to elicit preferences on a sensitive topic, and it is likely that respondents falsify their preferences in front of a human enumerator (for example, they may presume what the enumerator believes in a certain way and prefers one of the alternatives over the other and try to respond the questions in a way that pleases the enumerator or is not objectionable to him/her, etc.) Therefore, it is necessary to create a safe space for respondents to answer the DCE questions truthfully and avoid social desirability bias. Online surveys offer this safe space.

The main disadvantage of an online survey in a developing country, such as Egypt, is that the sample is not necessarily representative of the population. Despite this challenge, collecting an online survey for this study is superior to a phone or face-to-face survey because of the four benefits mentioned earlier. Therefore, the sample for this study is not representative of the Egyptian population.

Nevertheless, the results can be insightful about the Egyptian population in general. Table 1 reports the summary statistics of demographic variables for men and women in the collected sample.

The left panel is for men, and the right panel is for women. The top part of the table reports age, education, marital status, and the number of children for men and women. The bottom section, however, is different for men and women. The left panel describes the employment and income variables for women, and the right panel for men's wives (not men.)

The average age of respondents is about 35 years old for the men's and women's samples. The Egyptian population is young, and it is not surprising that the average age is lower than 40. The

² One of the common examples of *bounded rationality* in economics is when people are time-crunched and have to make a decision fast. They are prone to use their gut feelings and make non-optimal decisions.,

education variable, however, is different from the general Egyptian population in the urban areas. More than 70% of men and women in the sample are college educated. The sample for this study is more educated than the Egyptian population. The results of this study mostly map the preferences of the college-educated population (except when men are asked to answer DCE questions from the viewpoint of other men; they may consider the general population, not just college-educated people, for those questions.) Women in the sample are slightly more educated than men, which is not surprising as more Egyptian women go to college than men.

The summary statistics of various variables are similar between men and women. The only interesting differences are in the employment reported by women about themselves vs. by men about their wives. : 28% of women report that they are not working but looking for a job, and 23% say they do not work (and not looking for a job). Men, however, report that 9% of their wives are not working but looking for a job, and 41% of their wives are not working (and not looking for a job.) Although these numbers are different, the sums of them are similar; In other words, 51% of women (28% + 23%) report that they do not work or do not work but look for a job; for simplicity, let us call the latter unemployed. Similar to women, 50% of men (9% + 41%) report that their wives do not work or are unemployed. So men and women in the sample agree about the share of all women who are not working (out of the labor market or unemployed.) They, however, disagree on the share of the unemployed. One hypothesis that can explain this difference is that some women who are unemployed may not tell their husbands that they are looking for a job, probably because they are not sure whether their husbands approve of it. They may prefer to wait until they find a good feasible option that their husbands like before discussing it with them. So although husbands know that their wife do not work, they may not know that they are looking for a job. In this case, men under-report the share of their wives who are unemployed and over-report the share of those

who are not working (and not looking for a job.) This is an interesting hypothesis that is worth exploring in another study.

4. Results

Table 2 reports the estimated willingness to pay for various job attributes for women. It has four columns: In column (1), a woman's willingness to pay for the three attributes of a job for herself is reported. Column (2) represents a woman's perception of her husband's willingness to pay for the three attributes of a job that is for her (his wife). 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 a man's willingness to pay for the three attributes of a job for his wife (or his hypothetical wife). In column (4), a man's perception of other men's willingness to pay for the three attributes of a job for their wives is presented. As mentioned, a positive estimate means an employer has to pay the average respondent to accept such a job and a negative number means the average respondent accepts a wage penalty to get a job with that attribute (as opposed to the omitted 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 single-gendered (all-female) or mixed-gendered. As depicted in column (1), women have some preference for mixed-gender work environments.

Employers have to pay them 4% higher wages so that they accept a job in an all-female environment. They, however, think that their husbands' preferences are the opposite (column (2)). They think their husbands are willing to accept a 9% wage penalty for a job in an all-female environment. This is a large underestimate of the reality; As column (3) shows, men are willing to pay 63% in penalties for an all-female work environment (about seven times larger than women's perceptions of their husbands' WTP.) Women's perception of their husbands' preferences for a full-

time job matches their own preferences as well the actual men's preferences. Column (3) shows that men are willing to accept a staggering 63.3% penalty for an all-female work environment. This is the most important attribute for men (among the three attributes,) which is consistent with the hypothesis of this study that men strongly prefer their wives to work in an all-female vs. a mixed-gender environment. Interestingly, men think other men accept a smaller wage penalty for an all-female work environment (43% in column (4) vs. 63% in column (3)). This is interesting as in Egypt; it seems men think other men are less conservative than they are themselves. In Saudi Arabia, however, Berziynski et al. (2019) found that men think other men are more conservative than they are. They show that this wrong belief leads to lower female labor force participation (FLFP). The WTP for the gender of the work environment among educated Egyptians, however, does not seem to follow that pattern. Men underestimate how much other men are willing to accept as a penalty for an all-female environment.

Estimates in the second row are somewhat similar across columns (1)-(4). Women prefer full-time jobs and are willing to pay 38% in wage penalty for them. They think their husbands have a similar WTP (31%) for a full-time job. The results for men confirm this perception (30%). Men's perception of the WTP of other men is accurate and similar (36%). The fact that both men and women prefer full-time jobs is surprising as the literature has argued that women might prefer part-time jobs due to the responsibilities at home that society (in the MENA region) expects from them. We can explain this result by the fact that the total earnings are smaller for part-time jobs than for full-time jobs. Women and men are willing to accept a penalty on hourly wages for full-time jobs because the total earnings are higher in full-time jobs. But the penalty is half the size of the penalty men are willing to pay for an all-female work environment for their wives.

Women care about whether a job is in the government sector, but their WTP is about six times smaller than a full-time job (5.6% vs. 38%; column (1)). Women also think their husbands prefer

government jobs almost twice as much as they do (9.8% wage penalty vs. 5.6%). In reality, we do not have evidence to argue that men care about government vs. private sector jobs when we control for the other two attributes (columns (3) and (4)). The willingness to pay for a government sector job (vs. a private sector job) is not statistically significant. These interesting results show that despite the strong presence of women in government-sector jobs documented by the literature, the preference for government-sector jobs is weak at best and is only pronounced among women. It seems that for men, who have a significant agency over women's work decisions, the gender of the work environment has the top priority. It is more likely that jobs in the government sector, like teaching in primary schools, have an all-female environment, and that is the reason for the strong presence of women in government sector jobs. When a job is in an all-female environment in the private sector jobs, it is superior to a government sector job. So controlling for the gender of the work environment, men do not care (at least as much) about the sector of the job.

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 their hypothetical marriage. I split the sample into married and single respondents and report the results for each sub-sample in Table 3. The stories that the results for these two groups tell are somewhat similar to the stories in Table 2. Married women do not care about an all-female work environment, but interestingly, single women do. This could be because single women look for a potential spouse. Married women think that their husbands do care about the gender of the work environment, but they may severely underestimate their husbands' WTP (columns (2) vs. (3)). The married men's WTP for an all-female work environment (column (3)) is quite large, although the p-value is 0.15. This imprecise estimate shows that their wives' employers must increase wages by 106% so that men accept their wives to work in a mixed-gender environment. This is 40% larger than the estimate in column (3) of Table 2. More

observations are required to estimate this WTP precisely. Single Men's WTP for an all-female work environment (column (7), on the other hand, is precisely estimated and is about 42%, which is similar to their perceptions of other men's WTP (38%; column (8)). Married men's perception of other men's WTP is also not statistically different (49%).

The WTP for the full-time attribute is roughly the same as the estimates in Table 2. One interesting but not surprising pattern is that single women are willing to accept a larger penalty for a full-time job than married women (53% in column (5) vs. 29% in column (1)). Married women have responsibilities at home, which creates constraints for them for full-time jobs. The results for the government sector are mostly small and imprecise, except for the married women's perception of their husbands' WTP, which is about 10%. This is an overestimate of the penalty married men are willing to accept for government sector jobs.

Another interesting way to study heterogeneity in the results is to split the sample based on whether a female respondent or a male respondent's wife is working. The left and right panels of Table 4 report the results for working and non-working women/wives, respectively. Almost half of all women work, so the sample of women is equally split between the left and right panels: 221 working and 229 not working (columns (1), (2), (5), and (6)). The sample for men, however, is significantly smaller because about half of men are single (without wives.) Among the married men, half of their wives are working, and half are not: 109 working wives and 107 non-working wives. Hence, the results for men are less precise, although interesting.

Working women prefer mixed-gender environments. They have to be paid 13.6% more to work in an all-female environment (column (1)). One hypothesis to explain this interesting phenomenon is that there is some anecdotal evidence that competition among women is higher in all-female environments, which makes them more difficult conditions to work in. Working women, however,

think their husbands are indifferent to the gender mix of the work environment (column (2)). In reality, however, men with working wives strongly prefer all-female environments. Column (3) shows that they accept a 51.7% wage penalty for their wives (p -value is 0.11). These men, however, think their male counterparts accept a 30% wage penalty for their wives (column (4)), which shows they are more conservative than other men.

Non-working women do not care about the gender mix of their potential working environment. They, however, think their husbands or potential husbands do care about this and accept a 15% wage penalty for that (columns (5) and (6)). The estimate of the penalty men with non-working wives accept for an all-female work environment is quite large at 440%, although quite imprecise. Those men, however, think that other men accept a wage penalty of 73% for such jobs (p -value less than 5%). Comparing the size of the coefficients in columns (7) vs. (3) or (8) vs. (4) shows that these men have substantially more aversion toward a mixed-gender work environment.

Women in general, and working women in particular, have a strong preference for full-time jobs (columns (1), (2), (5), and (6)). Working women, for example, accept 47% in wage penalties to work full-time. Non-working women have a smaller WTP for full-time jobs, however. Men seem to not care about full-time jobs (columns (3), (7), and (8)), although there is evidence that they think other men care (column (4)).

Working women do not care whether a job is in the government or private sector. Non-working women, however, may prefer government sector jobs. The WTP, however, is about six times smaller than the WTP for full-time jobs. They also think their husbands prefer a job in the government sector for them and are willing to accept an 11.5% in wage penalty for it. (column (6)). Columns (3), (4), (7), and (8), however, do not offer evidence that men care about government-sector jobs when we control for the other two attributes.

Working women are indifferent between government and private sector jobs. Non-working women, however, prefer government sector jobs. It seems they are willing to accept a 5% penalty for such jobs. They also think their husbands prefer government sector jobs and are willing to accept a 10% penalty (similar to the results for the whole sample in Table 2).

Overall, this study offers three sets of results: 1) Single and working women prefer mixed-gender work environments (probably for different reasons). Other women are indifferent to the gender of the working environment. Women, however, think that their (potential) husbands prefer all-female work environments, but they gravely underestimate men's WTP for it. By far, this is the most important job attribute men consider for their (potential) wives. 2) There is almost universal agreement on the WTP for full-time jobs among men and women. This WTP is roughly about half of the men's WTP for an all-female work environment, but it is the most important attribute among these three for women. 3) Controlling for the gender of the work environment and the government vs. private sector, men do not prefer government sector jobs over private sector jobs for their (potential) wives. There is some evidence that women in general and non-working women, in particular, are willing to accept a 5% penalty for a government sector job. Besides the fact that this WTP is small, I did not find evidence of it for other female groups.

5. Conclusion

The result of this study may explain the low FLFP rates in the MENA region. This is the only region in which most societies require husbands' approval of women's decision to work. Therefore, husbands' preferences are a critical factor in a woman's work. This study showed that in Egypt, the most important job attribute for a husband is the gender of the work environment. The large WTP for an all-female work environment (63%) shows that husbands most likely veto any woman's decision to work in a mixed-gender environment. Since there are few jobs with 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. Given the legal and cultural similarities among the countries in the region, one may expect the same pattern in other MENA countries. Therefore, the puzzle of the low FLFP rate in the MENA region could be explained by this phenomenon.

This has interesting and important policy implications. For example, any policy that does not address the role of men's preferences, like increasing women's education or providing more government jobs, may not increase FLFP rates. The main factor that can affect the FLFP rate is a legal reform that reduces men's authority in women's decisions to work.

In addition to the DCE questions, I asked respondents to rank various job attributes (beyond these three attributes) in order of importance to them. In the next version of this paper, I will provide further insights into the other job attributes that matter to men and women.

References

- Assaad, Ragui, and Fatma El-Hamidi (2001). "Is All Work the Same? A Comparison of the Determinants of Female Participation and Hours of Work in Various Employment States in Egypt." In Cinar, Mine (Ed.) *The Economics of Women and Work in the Middle East and North Africa*. Research in Middle East Economics, edited by Mine Cinar. Vol. 4. Greenwich, CT: JAI press.
- Assaad, Ragui, and Fatma El-Hamidi (2009). "Women in the Egyptian Labor Market: An Analysis of Developments, 1988-2006." In Assaad, Ragui (Ed.) *The Egyptian Labor Market Revisited*, 219–58. Cairo, Egypt: The American University in Cairo Press.

- Assaad, Ragui, Hendy, Rana, and Chaimaa Yassine (2014). "Gender and the Jordanian Labor Market." In Assaad, Ragui (Ed.) *The Jordanian Labour Market in the New Millennium*, 105–43. Oxford, U.K.: Oxford University Press.
- Assaad, Ragui A., Hendy, Rana, Lassassi, Moundir, and Shaimaa Yassin (2018). "Explaining the MENA Paradox: Rising Educational Attainment, Yet Stagnant Female Labor Force Participation." IZA Discussion Paper No. 11385, Available at SSRN: <https://ssrn.com/abstract=3153349>
- Barro, Robert J., and Jong Wha Lee (2013). "A new data set of educational attainment in the world, 1950–2010," *Journal of Development Economics*, 104: 184-198.
- Cavalcanti, Tiago V. de V., and José Tavares (2016). "The Output Cost of Gender Discrimination: A Model-based Macroeconomics Estimate." *The Economic Journal*, 126(590): 109-134.
- Chamlou, Nadereh, Muzi, Silvia, and Hanane Ahmed (2011). "Understanding the Determinants of Female Labor Force Participation in the Middle East and North Africa Region: The Role of Education and Social Norms in Amman," Working Papers 31, AlmaLaurea Inter-University Consortium.
- Bahramitash, Roksana, and Hadi Salehi Esfahani (2011). *Veiled Employment: Islamism and the Political Economy of Women's Employment in Iran*. Syracuse, NY: Syracuse University Press.
- Esfahani, H. S., and Shajari, P. (2012). "Gender, education, family structure, and the allocation of labor in Iran." *Middle East Development Journal*, 42(2): 1-40.
- Karshenas, Massoud, Moghadam, Valentine M., and Nadereh Chamlou (2016). "Women, Work, and Welfare in the Middle East and North Africa: Introduction and Overview," World Scientific Book Chapters, in: Nadereh Chamlou & Massoud Karshenas (Ed.), *Women, Work and Welfare in*

the Middle East and North Africa: The Role of Socio-demographics, Entrepreneurship and Public Policies, chapter 1, pages 1-30, World Scientific Publishing Co. Pte. Ltd.

Majbouri, Mahdi (2010). *Against the Wind: Labor Force Participation of Women in Iran*. Ph.D. Dissertation, University of Southern California.

McFadden, D., and K. Train (2000). "Mixed mnl models for discrete response." *Journal of Applied Econometrics*, 15(5):447-470.

Nazier, Hanan, and Racha Ramadan (2016). "Women's Participation in Labor Market." Economic Research Forum Working Paper.

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

Ross, Michael L. (2008). "Oil, Islam, and Women." *American Political Science Review*, 102(1): 107–23.

Said, Mona. (2014). "Determinants of Job Quality and Wages of the Working Poor: Evidence from 1998--2006 Egypt Labor Market Panel Survey." *Econometric Methods and Their Applications in Finance, Macro and Related Fields*. World Scientific.

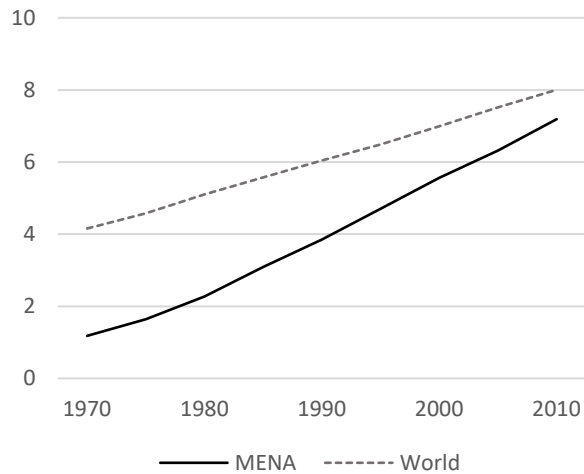
Said, Mona (2015). "Wages and Inequality in the Egyptian Labor Market in an Era of Financial Crisis and Revolution." In *The Egyptian Labor Market in an Era of Revolution*, edited by Ragui Assaad and Caroline Krafft, 52–69. Oxford, U.K.: Oxford University Press.

World Bank (2004). *Gender and Development in the Middle East and North Africa*. MENA Development Report, Washington DC: World Bank.

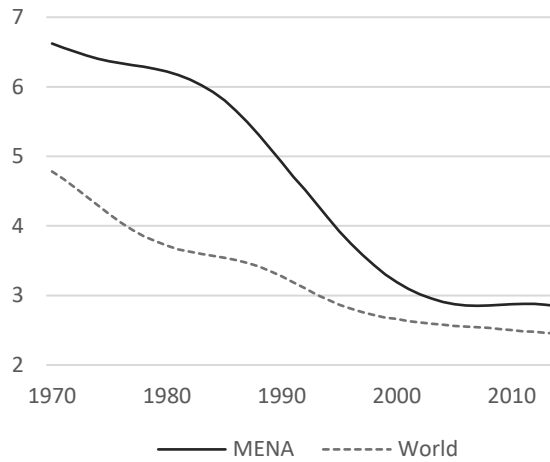
Yassin, Shaimaa (2013). "Structural Labor Market Transitions and Wage Dispersion in Egypt and Jordan." Economic Research Forum Working Paper Series, no. 753.

Figures

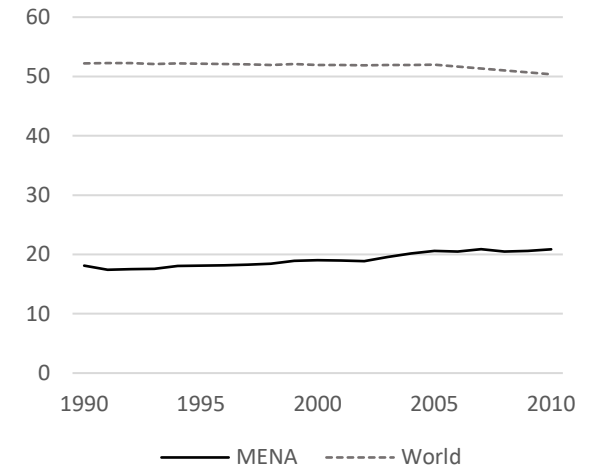
Figure 1 – Education, Fertility, and Labor Force Participation of Women in MENA



(a) Average years of education for women aged 15-65



(b) Fertility rate (children per woman)

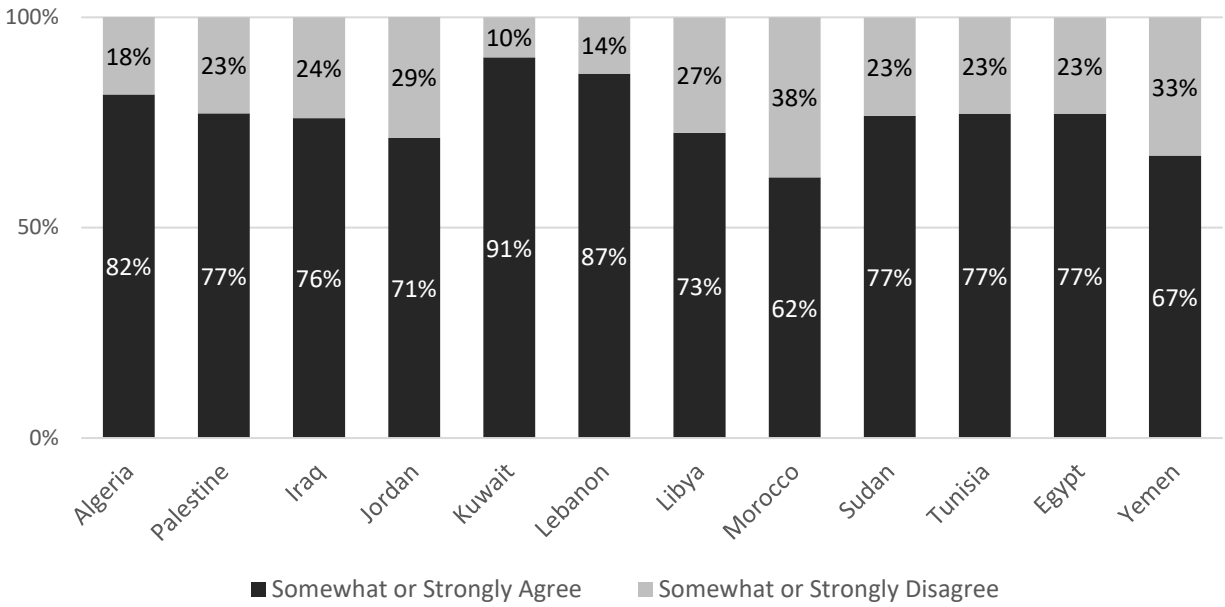


(c) Female labor force participation (% of female pop.)

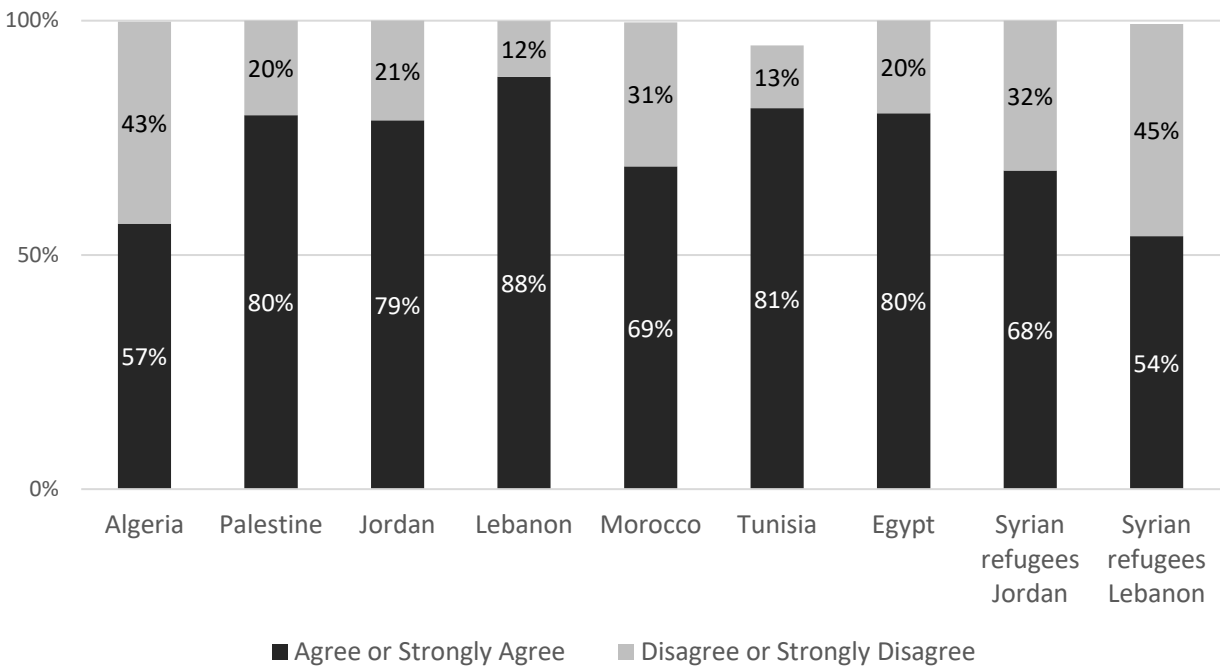
Note: Figure 1(a) depicts author's calculations using Barro and Lee (2013) dataset. It is generated by calculating the population-weighted average of years of education for women across various age groups and countries. Data source for Figures 1(b), and (c) is World Bank Development Indicators

(<http://data.worldbank.org/indicator/SP.DYN.TFRT.IN> and <http://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS>; accessed on Feb. 9, 2017)

Figure 2 – Men’s Responses to the Married Woman Employment Question



(a) The 2013 Arab Barometer Surveys: “to what extent do you agree with the following statement: A married woman can work outside the home.”



(b) The 2016 Arab Barometer Surveys: “to what extent do you agree with the following statement: A married woman can work outside the home if she wishes.”

Tables

Table 1 – Summary Statistics

	Women (450 obs.)				Men (450 obs.)			
	Mean	St. dev.	Min	Max	Mean	St. dev.	Min	Max
Age	34.87	11.43	18	76	33.79	13.09	18	76
Education								
Less than High School	0.04	0.19	0	1	0.04	0.19	0	1
High School	0.08	0.26	0	1	0.14	0.34	0	1
Middle or Higher Technical Institutes	0.08	0.28	0	1	0.12	0.33	0	1
Bachelor's Degree and above	0.80	0.40	0	1	0.70	0.46	0	1
Married	0.52	0.50	0	1	0.48	0.50	0	1
Number of Children	1.12	1.40	0	10	0.99	1.29	0	6
					Men's wives (216 obs.)			
Employment								
Work for the government	0.14	0.35	0	1	0.19	0.40	0	1
Work for the private sector	0.21	0.41	0	1	0.15	0.36	0	1
Have my own business	0.13	0.34	0	1	0.14	0.35	0	1
Work for the family business	0.01	0.08	0	1	0.01	0.12	0	1
Not working but looking for a job	0.28	0.45	0	1	0.09	0.28	0	1
Not working	0.23	0.42	0	1	0.41	0.49	0	1
Monthly Income (in EGP) [†]	5,916	9,169	0	90,000	6,125	8,551	0	70,000
Minimum Acceptable Monthly Income (if not working) [‡]	4,545	4,306	0	50,000	6,736	6,845	0	50,000

Note:

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)
All-female	+0.040† (0.024)	-0.091** (0.035)	-0.633** (0.206)	-0.430** (0.111)
Full-time	-0.382** (0.066)	-0.313** (0.070)	-0.300** (0.113)	-0.360** (0.096)
Government	-0.056* (0.029)	-0.098** (0.041)	-0.108 (0.074)	-0.050 (0.044)
Observations	6,300	6,300	6,300	6,300
Repondents	450	450	450	450
Choice sets	7	7	7	7

Note: The coefficients show WTP estimates as a share of wage using a mixed-logit choice model. Negative numbers mean a penalty is accepted for the associated attribute. A single woman or man assumes the persona of their potential spouse when answering questions related to columns (2) and (3).

** p<0.01, * p<0.05, † p<0.10

Table 3 – Willingness to Pay for Various Job Attributes for Married vs. Single Respondents

	Married				Single			
	Women's pref.	Women's perceptions of their husbands' pref.	Men's pref.	Men's perceptions of other men's pref.	Women's pref.	Women's perceptions of their husbands' pref.	Men's pref.	Men's perceptions of other men's pref.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
All-female	-0.021 (0.024)	-0.151** (0.053)	-1.06 (0.740)	-0.489** (0.190)	+0.141** (0.057)	-0.004 (0.049)	-0.421** (0.144)	-0.380** (0.131)
Full-time	-0.294** (0.066)	-0.219** (0.071)	-0.407 (0.311)	-0.355** (0.139)	-0.528** (0.150)	-0.440** (0.143)	-0.245** (0.103)	-0.365** (0.134)
Government	0.045 (0.032)	-0.101* (0.053)	-0.287 (0.257)	-0.085 (0.071)	0.074 (0.058)	-0.093 (0.064)	-0.021 (0.063)	-0.021 (0.058)
Observations	3,290	3,290	3,024	3,024	3,010	3,010	3,276	3,276
Repsondents	235	235	216	216	215	215	234	234
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. Negative numbers mean a penalty is accepted 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).

** p<0.01, * p<0.05, † p<0.10

Table 4 – Willingness to Pay for Various Job Attributes for Working vs. Non-working Women/Wives

	Women/Wives Working				Women/Wives Not Working			
	Women's pref.	Women's perceptions of their husbands' pref.	Men's pref.	Men's perceptions of other men's pref.	Women's pref.	Women's perceptions of their husbands' pref.	Men's pref.	Men's perceptions of other men's pref.
All-female	+0.136** (0.049)	-0.016 (0.053)	-0.517‡ (0.328)	-0.295† (0.159)	-0.028 (0.029)	-0.147** (0.056)	-4.387 (14.834)	-0.734* (0.457)
Full-time	-0.467** (0.120)	-0.385** (0.123)	-0.278 (0.202)	-0.342* (0.166)	-0.311** (0.072)	-0.247** (0.077)	-1.295 (4.452)	-0.385 (0.253)
Government	-0.052 (0.047)	-0.072 (0.060)	-0.097 (0.136)	-0.032 (0.075)	-0.056† (0.035)	-0.115* (0.054)	-1.462 (5.115)	-0.155 (0.150)
Observations	3,094	3,094	1,526	1,526	3,206	3,206	1,498	1,498
Repsondents	221	221	109	109	229	229	107	107
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. Negative numbers mean a penalty is accepted 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).

** p<0.01, * p<0.05, † p<0.10

‡p = 0.11